

CI/SfB (31.59), Xt7

# **POWERMATIC®** and **POWERMATIC®** FREE SWING

*The controlled, concealed door closers*



**SAMUEL HEATH**

since 1820



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# **POWERMATIC®** and **POWERMATIC®** **FREE SWING**

*The controlled, concealed door closers*

**P**owermatic® and Powermatic® Free Swing are our third generation jamb-mounted, concealed door closers. Their development owes much to the expertise gained over forty years of designing and manufacturing their successful predecessors, Perko and Perkomatic, but also draws heavily on the innovatory design and engineering know-how for which Samuel Heath is renowned.

The Powermatic® controlled, concealed door closer offers the functionality and benefits you would expect from the leading manufacturer of jamb-mounted closers. Powermatic® Free Swing, when connected to the building's 24-volt fire alarm system, delivers these same advantages with the added functionality of allowing the door to be operated manually and left open as desired.

Specifically designed to meet the requirements of the European standard for controlled door closing devices, BS EN 1154, Powermatic® and Powermatic® Free Swing incorporate a special twin-power mechanism. Together with other unique features, this mechanism enables the door closer to deliver the performance demanded by the standard whilst allowing the door closer body to be fitted within the door, ensuring that the closer is totally concealed when the door is closed.

Such is the efficiency of these mechanisms that both door closers can enable a door assembly to meet relevant United Kingdom accessibility requirements.

The door closers' innovative design has been translated into high performance products of outstanding reliability through the disciplined application of engineering principles and state of the art manufacturing techniques.

With the vast majority of components manufactured in-house, we are able to exact precise control over the entire production process. This direct control also assures ex-stock availability of the door closers for both small and large scale building projects.

The latest computer-controlled machinery assures microscopic accuracy in the production of the door closers' component parts, whilst meticulous quality control throughout all processes, including individual testing of key sub-assemblies and the final product itself, result in products that will give years of reliable, maintenance-free service deserving of our ten-year guarantee.

Powermatic® and Powermatic® Free Swing not only meet the plethora of national and international performance standards that prevail for fire doors and accessible routes, but also, thanks to their concealed nature, offer a number of significant health and safety benefits that make them the preferred choice for many health, care, education, commercial, leisure and hotel projects. See the 'hidden benefits of concealment' section later in this brochure for further details.

## Specification considerations

There are many factors that need to be taken into consideration when choosing a door closer.

Compliance with legislation and technical performance standards, covering areas such as fire safety and accessibility, is obviously vital.

Ensuring that a door closer meets these requirements and that the manufacturer is able to substantiate their claims through independent certification is a vital part of the specification process.

One thing you can be certain of is that Powermatic® and Powermatic® Free Swing tick all the right boxes when it comes to performance.

**D**oor closers play an essential role in assuring the safety of a building and its occupants in case of fire. They ensure that the fire door closes efficiently and correctly, and remains closed against its seals.

A number of performance standards and regulations influence the specification and use of door closers in case of fire.

## BS EN 1154

The standard provides details on product types, classification by use, test cycles, door width and mass, corrosion resistance, as well as definitions, product performance requirements, test apparatus, test methods and marking of products.

Key features of the standard are the stipulation that:

- door closers used on fire doors should be of power size 3 and above.
- door closers should complete 500,000 opening and closing cycles without loss of performance or significant wear.
- a door closer representative of its model shall have been incorporated in a door assembly that has satisfied the appropriate criteria of a fire test. The test shall have been on a full sized assembly in accordance with BS EN 1634-1.

Both Powermatic® and Powermatic Free Swing are rated power size 3 and comply with all of these requirements.

## BS EN 1155

This standard specifies requirements for electrically powered, free swing and hold-open devices classifying products according to use, test cycles, door mass, fire resistance, safety and corrosion resistance.

Powermatic® Free Swing complies with the standard's requirements.

## BS EN 1634-1

BS EN 1634-1 is a Europe-wide standard designed to provide more realistic measurement of a product's performance in the case of fire.

Fire resistance testing of doors is covered by BS EN 1634-1. It is against this standard that Powermatic® and Powermatic® Free Swing have been tested/approved by an independent laboratory and proved to meet the requirements for one-hour and half-hour fire doors, making them suitable for a wide variety of fire door applications.



## BS 476

The British Standard for fire resistance testing, BS 476 is still widely used in the industry.

As with BS EN 1634-1, it covers fire resistance testing of doors and, again, Powermatic® has successfully completed testing by an independent laboratory and proved to meet the standard's requirements for one-hour and half-hour fire doors, making them suitable for a wide variety of fire door applications.

## CE mark

BS EN 1154 and BS EN 1155 are regarded as "harmonised" European standards and compliance with either, supported by suitable evidence, allows the application of the CE mark.

As closers for fire/smoke doors have a critical safety function, application of the CE mark requires independent verification by a notified certification body involving initial type-testing of the product to BS EN 1154 and/or BS EN 1155, inspection of the manufacturer's factory production control and continuing surveillance and approval of the factory production control system.

Powermatic® and Powermatic® Free Swing have successfully completed independent fire testing/approval to BS EN 1634-1 for one-hour and half-hour, latched and unlatched fire doors.

The manufacturing processes and systems used in their production comply with BS EN ISO 9001.

As a result of their performance, durability and quality Powermatic® and Powermatic® Free Swing carry the CE mark.

## Building Regulations

United Kingdom Building Regulations recommend third party fire test certification (Approved Document B for England and Wales, Section 2 in Scotland and Part S in Northern Ireland).

Powermatic® has been independently tested and certified for use on fire doors by Certifire (see below).

## Certifire

Recognised by regulatory authorities in the UK and overseas, Certifire requires:

- Door closers to have completed successful fire door tests.
- BS EN ISO 9001 certification.
- Independent audit testing against relevant British and European standards.
- Comprehensive field of application document based on carefully chosen tests.

The additional assurance provided by the Powermatic® certification under the Certifire scheme gives specifiers, enforcement authorities and building managers even greater confidence in the specification and use of the door closer.

**Certification and testing  
documentation is available on request  
or can be downloaded from our  
website at  
[www.perko-powermatic.co.uk](http://www.perko-powermatic.co.uk)**

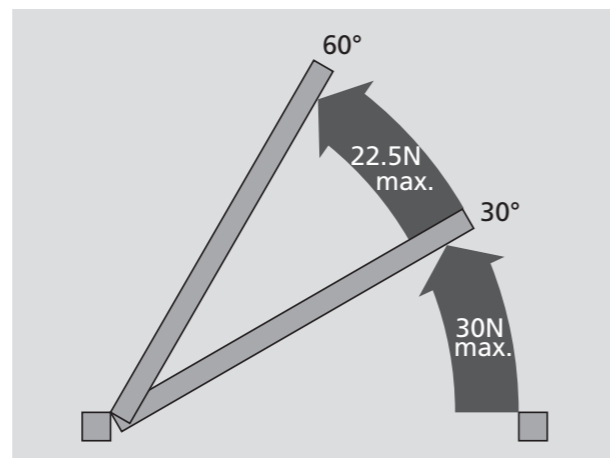
**T**he Equality Act imposes a duty on service providers and managers of premises to ensure that people with disabilities have access to the benefits and facilities the premises offer. This means that any physical barrier which might prevent people of differing abilities from accessing services should be removed.

Additionally, for educational establishments, the Special Education Needs and Disability Act (**SENDA**) imposes similar requirements and states that there should be an accessibility strategy in place for disabled pupils.

Where door closers are concerned, the key area of consideration is the force required to open the door. In the United Kingdom, this area of performance for door closers is stipulated in **BS 8300: 2009** and the various regional Building Regulations; **Approved Document M (ADM)** in England and Wales, Section 4 in Scotland and Part R in Northern Ireland. These various regulations state that, when measured at the leading edge of the door, the force required to open a manually operated door shall be not more than:-

- (a) **30N from 0° (the door in the closed position) to 30° open, and**
- (b) **22.5N from 30° to 60° of the opening cycle**

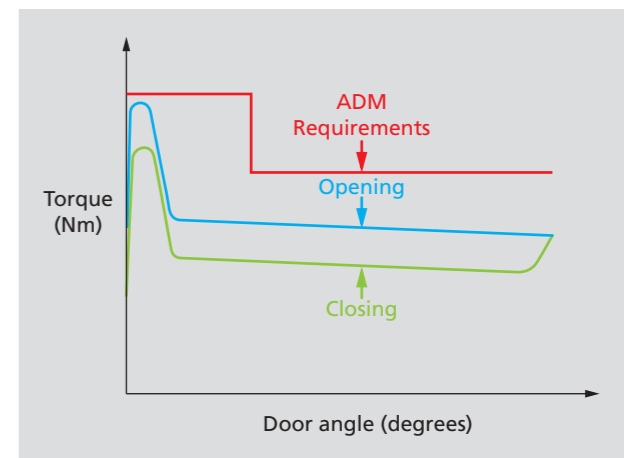
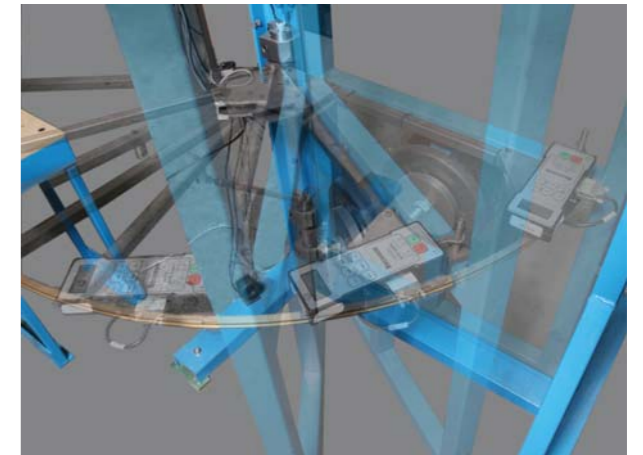
It should be noted that no manual door closer can in itself claim compliance with this regulation as the requirement applies to the complete doorset, fitted in situ. Other influences, such as width of door, smoke/acoustic/brush seals, hinges, etc. also need to be taken into account.



**T**he door closers' unique design employs two mechanisms; on opening the door from the closed position, and following the initial compression, the energy is held primed in the first mechanism, but also kept isolated until required on the closing and latching action. This ensures a low opening force in the initial stages of opening. The second compression mechanism is used to close the door from greater opening angles.

The graph on this page clearly shows that after the initial 4 degrees of door opening, the opening forces actually reduce and the efficiency remains constant for the first 60 degrees. This is in contrast to some popular door closing solutions where the opening forces required actually increase after the initial 4 degrees of opening.

The two-stage mechanism used in Powermatic® and Powermatic® Free Swing satisfies both **BS EN 1154** and also aids compliance with Building Regulation requirements for opening forces.



**W**hether you are an architect, designer or architectural ironmonger considering specifying Powermatic® or Powermatic® Free Swing on a project, a building manager or clinician seeking to enhance the safety and comfort of your facilities, an installer or a professional in building and fire control, you can draw on our many years of experience in door closer design, manufacture and application to receive the very best advice on the selection and application of Powermatic® and Powermatic® Free Swing.

Our specification team provides a comprehensive support service to cover all aspects of door closer selection and application, ensuring that you not only make the right choice for your project, but also that the project derives maximum benefit from the use of Powermatic® and Powermatic® Free Swing.

For **specifiers and designers**, we are an approved **RIBA CPD** provider, offering presentations to help you meet your training requirements. Naturally, our team also provides detailed advice to assist in product selection and suitability for specific areas of application.

Professionals working for **regulatory authorities** also benefit from the specialist knowledge that our team brings to bear; whether for continuing professional development or simply to expand knowledge in the critical areas of fire safety and enhanced access, our specification advisors are able to deliver presentations on a one-to-one or seminar-style basis.

**Building and facilities managers** looking to reduce risk, improve safety or simply enhance the comfort of existing premises will gain further assurance by consulting our specification advice team who will be able to provide specific examples



of situations where our door closers have delivered a host of benefits for buildings and their occupants as well as advising on considerations specific to your particular field of interest.

Correct installation of Powermatic® and Powermatic® Free Swing is essential to insuring the door closers' performance and reliability, as well as maximising the benefits that ensue from their use. To this end, our team of advisors is able to offer a range of services, including instructional videos, telephone advice and, where necessary, on-site support.

Our specialist support services are supplemented by a dedicated website ([www.perko-powermatic.co.uk](http://www.perko-powermatic.co.uk)) which provides a wealth of information on all areas of the door closers' performance and application, including case studies and video presentations.

## 14 SPECIFICATION CONSIDERATIONS

## The hidden benefits of concealment

In addition to compliance with relevant legislation and performance standards, door closer selection relies heavily on the situation in which it is intended to be used.

Additional factors will have a significant influence on the type of door closer that is chosen. These might include aesthetics, safety, anti-ligature requirements, hygiene, reliability, sound insulation, economy and product support.

In all of these aspects, you will find Powermatic® and Powermatic® Free Swing to be eminently suitable for your project's needs.



The aesthetics of any project are close to the heart of every architect and interior designer, and they are becoming increasingly important in many health and care projects where a homely, less institutional atmosphere is desirable.

Ensuring that a door is free from devices that can detrimentally affect its appearance as well as interfere with the overall finish and ambience of the interior is a key part of creating the aesthetics that are envisioned and desired.

Whether for appearance or to enhance the environment, you will find the fact that Powermatic® and Powermatic® Free Swing are invisible when the door is closed, and extremely unobtrusive when open, a real benefit for all types of project.

In addition, the lack of surface mounted control arms and boxes makes Powermatic® and Powermatic® Free Swing particularly suitable in situations where door clearance is restricted, such as hotel guestrooms and ante-rooms where 90° reveals are so often found.



In addition to the safety implications of a door failing to function because the door closer has been vandalised (see page 19), the reduction of risk, and avoidance of litigation, is a key consideration for many designers and building managers.

Reducing the risk of doors and door furniture being used as a point of ligature is vital in psychiatric health and secure accommodation facilities, but the risk is also present in many other buildings. Anecdotal evidence suggests that at least one education authority has recognised this risk and installed Powermatic® door closers to minimise it.

Assessing the significance of this risk is a matter of professional judgement, but where present, Powermatic® and Powermatic® Free Swing can make a valuable contribution towards its reduction.

The door closers' total concealment when the door is closed plays a vital role in anti-ligature situations, but the benefit is enhanced by the fact that the door closers can be installed at a height which is low enough to virtually remove the risk of the closers being used as a suspension point.

When combined with continuous hinges, the door closers' link rods are completely obscured from the opening face side of the door.



Anything which makes an environment cleaner and more hygienic is welcome in all sectors of our society, particularly healthcare.

Powermatic®'s and Powermatic® Free Swing's concealment as well as their lack of significant exposed and horizontal surfaces ensure that they attract and retain very little detritus and potentially harmful bacteria which can be associated with surface mounted hardware.

Furthermore, their low mounting position within the door makes them very easy to inspect, reach and clean, simplifying hygiene and housekeeping regimes and making the world a cleaner place.



As mentioned, various regulations already impose requirements with respect to the reliability of the door closers.

There is one further consideration that can significantly enhance a door closer's ability to provide continuously reliable service and that is the reduced risk of vandalism.

There is probably no truer adage than 'out of sight, out of mind' when it comes to petty acts of vandalism, whether undertaken deliberately or occurring as a result of horseplay. Place something in full view, particularly in public buildings and educational establishments and it will almost certainly become a target for malicious or mischievous acts.

A damaged door closer will, more often than not, result in a total failure of the door. In the case of a fire, the consequences can be inconvenient at best and catastrophic at worst.

Being totally concealed when the door is closed, Powermatic® and Powermatic® Free Swing significantly reduce the risk of vandalism, thereby enhancing the reliability of the entire doorset.



## Product details

Cutting edge design and precision engineered manufacture enable Powermatic® and Powermatic® Free Swing to pack exceptional performance into a body so compact that it fits neatly into the structure of a door.

The result is that the door closers meet relevant fire performance standards and enable doorsets to satisfy the requirements for disabled access as well as delivering many other desirable benefits that concealment provides.

## **POWERMATIC®** **R100**

**P**owermatic® is one of the world's most advanced controlled, concealed door closers. It delivers outstanding performance and reliability, and possesses many unique features that deliver benefits to fire and non-fire door applications in housing, hotel, education, healthcare and many more applications.

Powermatic® provides controlled door closing without slamming, whilst its adjustable closing speed makes it suitable for use in situations where the elderly, infirm and less able require additional time to pass through the doorway.

### **Fire & safety**

- CE marked
- Successfully type-tested to BS EN 1154: 1997 power size 3
- BS EN 1634-1 fire tested for one-hour and half-hour fire doors
- BS 476 fire tested for one-hour and half-hour fire doors
- Certifire approved

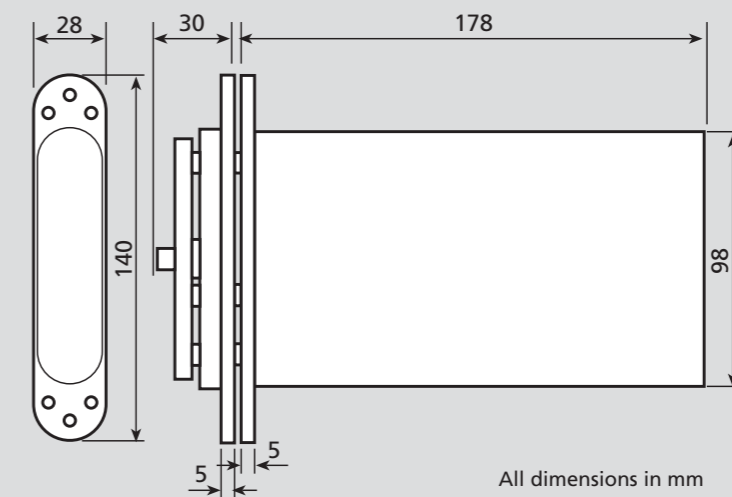
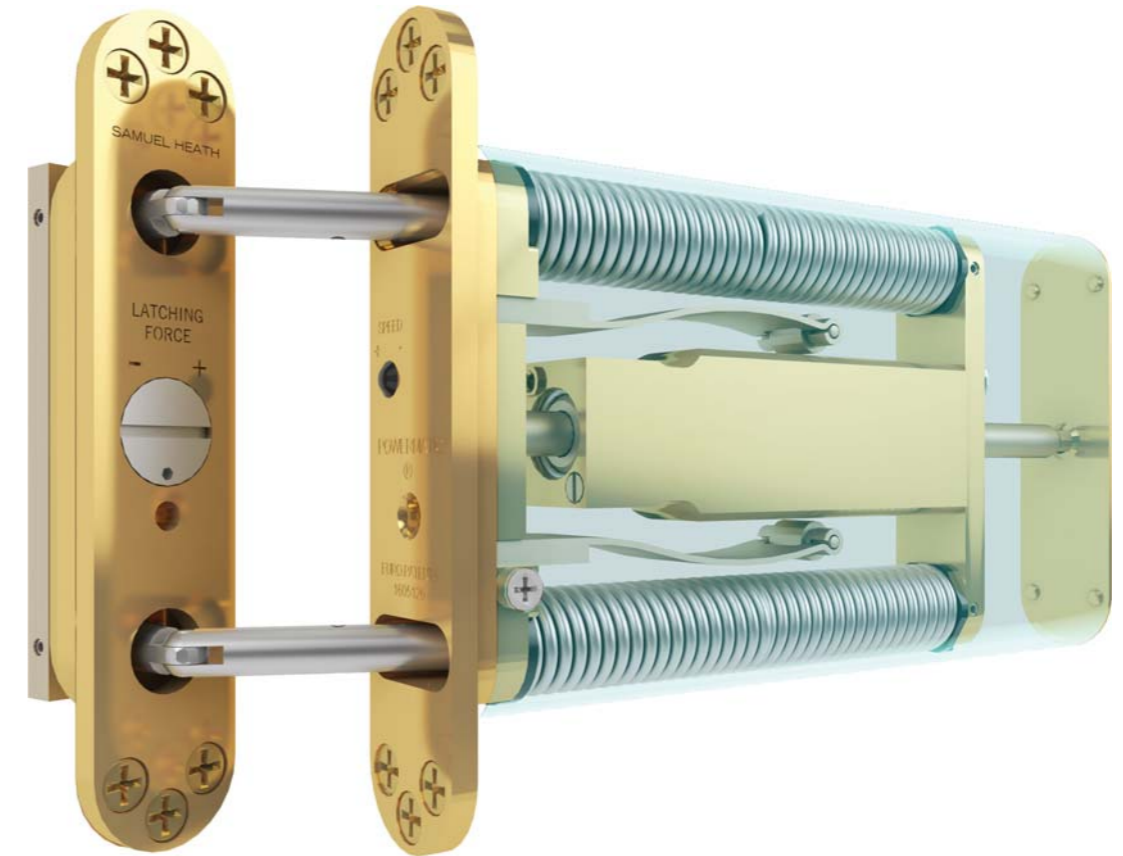
### **Accessibility**

- Ultra-efficient (exceeds threshold of 55% efficiency)
- Contributes towards achievement of BS 8300: 2009 and regional Building Regulations\*

\*Approved Document M (ADM) in England and Wales, Section 4 in Scotland and Part R in Northern Ireland. These regulations apply to the entire doorset in-situ and, therefore, no door closer can claim compliance on its own.

### **Performance and quality**

- Factory production control to BS EN ISO 9001: 2008
- Suitable for doors up to 80kg in weight and 950mm wide (BS EN 1154 size 3 test door 60kg)
- Suitable for latched and unlatched installations
- Can be used with electrically powered hold-open devices
- Adjustable closing speed and power latching action
- Endurance tested to 500,000 cycles
- Unique twin power mechanism
- 10-year guarantee
- Protected by worldwide patents
- On-site technical advice



## **POWERMATIC®** FREE SWING R106FS

**P**owermatic® Free Swing delivers all of the performance and practical benefits that have made Powermatic® such a success, but with the added functionality of enabling the door to be operated manually and left open as desired once the mechanism has been primed by opening the door to its maximum.

Linked to the building's 24-volt fire alarm system, automatic closing at a controlled rate takes place when the alarm is activated, when power to the door closer is switched off or when there is a power failure.

### Fire & safety

- CE marked
- Successfully type-tested to BS EN 1154: 1997 power size 3
- BS EN 1634-1 approved for use on one hour and half-hour fire doors
- Successfully type-tested to BS EN 1155: 1997
- Free swing door closers are recommended by the 'Fire safety risk assessment: residential care premises'.

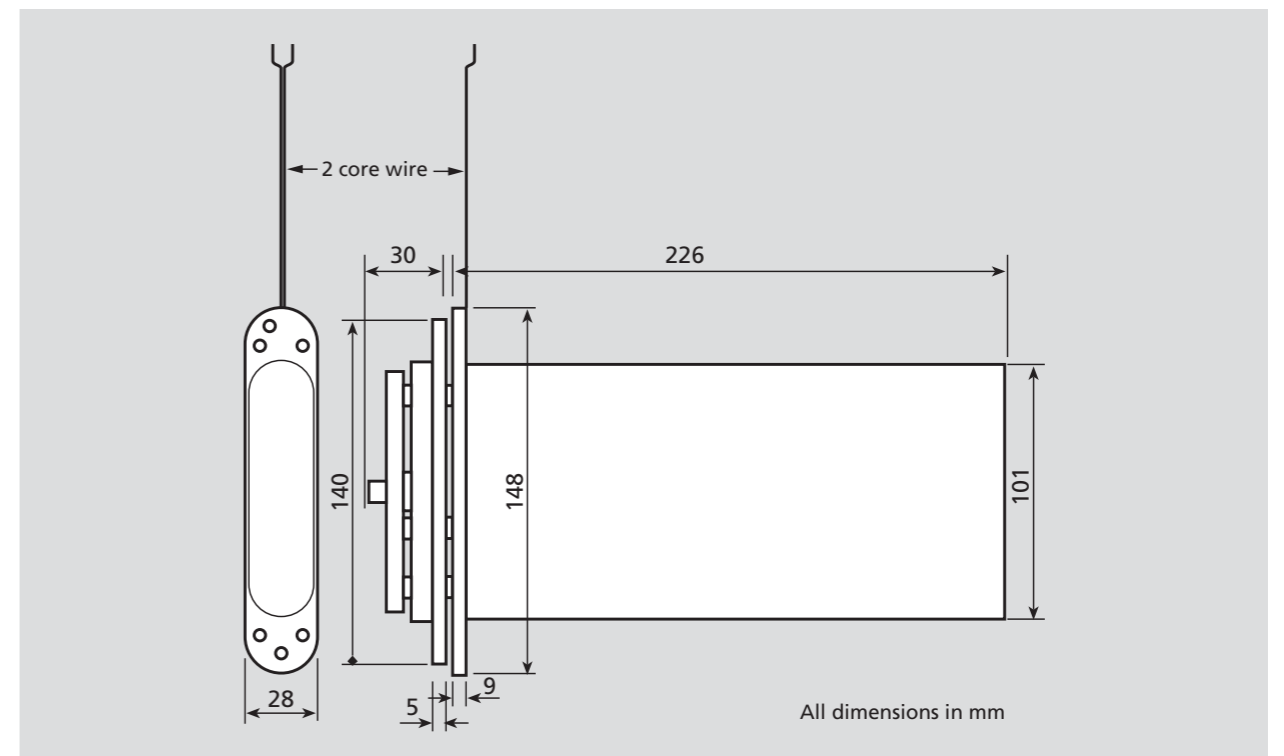
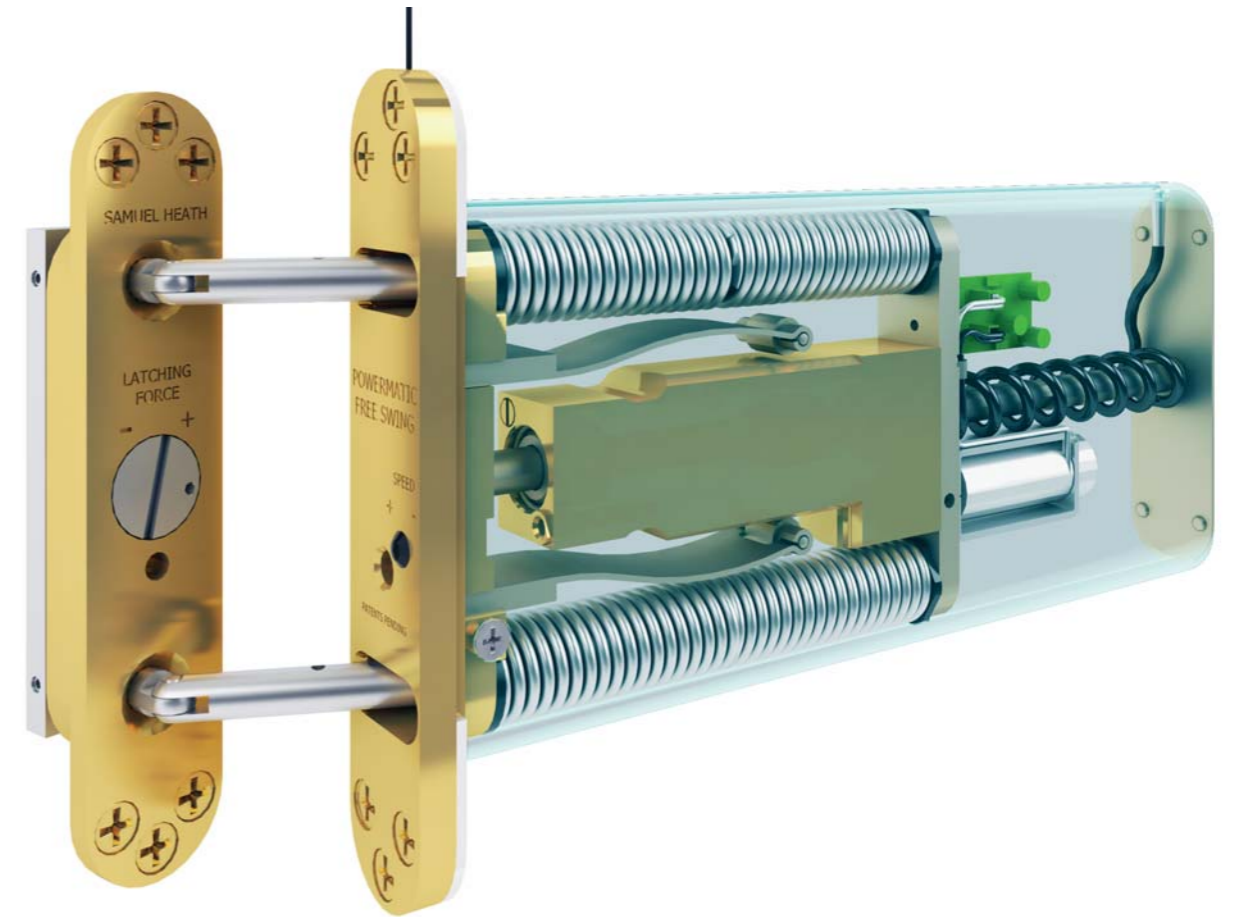
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# Product finishes

Powermatic® and Powermatic® Free Swing are available in a range of finishes, offering the potential to complement any door or decorative scheme.

The finishes shown on this page are for reference only. Accurate swatches for all finishes can be obtained by contacting customer services on 0121 766 4200.



Brass



Chrome



Satin chrome



Satin nickel



Polished nickel



Bronze finish



Antique brass



Bronze metal antique



Matt black chrome

## Product application

Suitable for a wide variety of situations where discreet, controlled, automatic closing is required, Powermatic® and Powermatic® Free Swing have become the preferred choice for specifiers and decision makers in a wide variety of projects in both private and public sectors of the industry.

In addition to their exceptional performance and durability characteristics, the fact that Powermatic® and Powermatic® Free Swing are completely invisible when the door is closed, and particularly unobtrusive when open, means that the door closers deliver a number of specific benefits that meet the special requirements of projects in key areas of application.

## Social housing



**P**owermatic® is specified and fitted by a number of local authorities and housing associations who recognise the benefits that the door closers bring in terms of safety, reliability and reduced maintenance.

The fact that Powermatic® and Powermatic® Free Swing are completely out of sight when the door is closed, and not easily visible when open, significantly reduces the opportunity for the closer to be vandalised, offering significant benefits, both to those responsible for the maintenance and upkeep of properties as well as for the residents themselves.

A damaged door closer can prevent the door functioning altogether, not simply failing to close automatically, though this in itself can cause problems. A fire door that fails to function is, at best, an inconvenience and, at worst, potentially fatal.

Add to this the cost of constantly replacing damaged door closers and the appeal of Powermatic® and Powermatic® Free Swing to the social housing sector becomes clear.

## Health & anti-ligature



**T**he healthcare sector draws a broad and varied array of benefits from the use of Powermatic® and Powermatic® Free Swing, most of which derive from the specifics of each application:-

### Safety and anti-ligature

In addition to the implications for safety that a vandalised door closer represents (see 'Education' on page 33), specialist areas of the health sector, such as psychiatric care, demand that particular attention be paid to the safety of vulnerable people.

Reduced, or anti-ligature solutions are vital in many such areas, and Powermatic® and Powermatic® Free Swing make a valuable contribution in reducing the opportunity for self-harm. The door closers' total concealment when the door is closed is an obvious factor in its anti-ligature credentials, but particularly apposite is the fact that Powermatic® and Powermatic® Free Swing can be mounted within 300mm of the bottom of the door, a height at

which effective ligature is considered impossible in the majority of circumstances.

### Hygiene/cleanliness

With minimal surface exposure to the environment Powermatic® and Powermatic® Free Swing attract very little detritus when in service. This feature and their low mounting height make cleaning procedures and inspection regimes quick and easy.

### Well-being

In frontline health services there is broad recognition that providing a homely, less clinical atmosphere aids recovery and enhances the lives of the service's consumers.

Using Powermatic® or Powermatic® Free Swing removes the unsightly mechanical controls that are so often associated with commercial projects, making for a more pleasant, comfortable and less institutionalised environment.



The need for residential care facilities to make adequate provision for fire safety is widely accepted, with the use of door closers, and free swing versions in particular, being recommended in the government's document: **'Fire safety risk assessment: residential care premises'**.

Powermatic® and Powermatic® Free Swing are perfect for use in residential care premises for fire and non-fire door applications.

Especially welcome in care homes is the fact that both door closers are totally concealed when the door is closed and particularly unobtrusive when the door is open. The lack of visible, unsightly control arms and mechanical housings that come with ordinary door closers facilitates a cleaner, more aesthetically pleasing and less institutionalised appearance to the interiors, imbuing a more homely feel, enhancing comfort and improving the overall ambience of the home.



As with any building that is open to the public on a regular basis, hotels are, to varying degrees, subject to many of the considerations mentioned in the sections on Education and Health.

However, Powermatic® and Powermatic® Free Swing have gained favour in the hotel sector thanks mainly to the enhanced aesthetics that their concealment brings both to the door itself and interior décor as a whole. The lack of surface mounted mechanical devices enables the designer to retain a clean, unhindered appearance to the door, and a look that will not detract from the desired visual effect of the decorative scheme.

From a practical perspective, tests have shown that Powermatic® and Powermatic® Free Swing offer an advantage over other concealed closing devices when it comes to sound insulation, as their installation requires minimal morticing of the door, ensuring that the door's sound insulation properties are retained.

Furthermore, the absence of protruding mechanical control arms and surface mounted boxes means that Powermatic® and Powermatic® Free Swing offer an ideal solution to situations where door clearance is restricted, such as with 90° reveals.

In addition, should the door closers require adjustment, their convenient position within the door facilitates quick and easy fine-tuning, unhindered by the restricted headroom that is so commonly experienced in guestroom reveals.



# Commercial



**P**erformance, reliability and return on investment are all boxes capably ticked by Powermatic® and Powermatic® Free Swing when it comes to commercial applications thanks to the door closers' features and benefits, whilst a ten-year guarantee offers ultimate assurance of its durability.

Such considerations are usually sufficient to make Powermatic® and Powermatic® Free Swing the first choice for commercial building projects, but one area in which the door closers garner particular favour with designers and their clients is in raised floor situations: Raised floors make it costly for a designer to opt for a floor mounted door closing device. Powermatic® and Powermatic® Free Swing provide the ideal solution.

# Education



**W**hether malicious or the result of a misguided action, the risk of damage being caused to a door closer is particularly high in most educational establishments.

The costs of repair and replacement, which can extend beyond that of merely replacing the door closer to repairing or replacing the door itself, can be considerable.

However, there are other, more severe consequences of a damaged door closer which transcend financial considerations; a damaged door closer will not only fail to perform its primary function correctly, but can render the door useless. The result may only be inconvenience, but in the case of a fire, the potential for disaster is easy to appreciate.

Whilst not a risk immediately associated with mainstream educational establishments, the risk of door closers being used as a point of ligature might also be a consideration. Recent anecdotal evidence

suggests that at least one local authority has replaced overhead door closers throughout all schools with Powermatic® to reduce the risk of self-harm.

The protruding arms and control boxes that are so evident with surface mounted door closers can present a very tempting target for the would-be vandal or prankster.

Concealment and unobtrusiveness ensure that Powermatic® and Powermatic® Free Swing remove much of the temptation and opportunity for vandalism, reducing costs and enhancing the comfort and safety of a building's occupants.



**P**owermatic® and Powermatic® Free Swing lend themselves particularly well to heritage and refurbishment projects where modern fire safety and convenience features need to be introduced, but where the retention of important, often historically significant, features and finishes is vital.

Naturally, the fact that Powermatic® and Powermatic® Free Swing are completely concealed when the door is closed, and unobtrusive when the door is open, makes the door closers ideal from an aesthetic viewpoint, but the door closers also deliver other key practical features above and beyond their impressive performance characteristics.

Shaped door heads and the excavation of floors pose insurmountable challenges for overhead door closers and floor springs respectively. Standard overhead door closers cannot be fitted to shaped door heads and the excavation of floors to

accommodate floor springs is undesirable, often impossible, in many heritage and refurbishment projects. Being fitted in the door jamb, Powermatic® and Powermatic® Free Swing provide a simple and extremely effective solution.

**P**owermatic® and Powermatic® Free Swing have been specified on many prestigious and important projects throughout the world. Listed below are a few examples of projects that have benefited from their unique features:

## Hotel & leisure

- Aria Resort and Casino, Las Vegas
- Cafe Royal, London
- Crowne Plaza, Hefei, China
- Farnham Estate Health Spa, Republic of Ireland
- Hilton, Manchester
- Jumeirah Emirates Towers, Dubai
- Mash Steakhouse, London
- Peninsula Hotel, Hong Kong
- Sarova Hotels, Kenya
- South Lodge Hotel and Spa, London
- The Rookery Hotel, London
- The Rosewood, Abu Dhabi
- The Savoy Hotel, London
- Wyndham Grand, London

## Public & private sector

- 52 Harley Street, London
- Birmingham City Council
- Godolphin and Latymer School, London
- Grangewood Mental Health Care Unit, Northern Ireland
- Jameson House, Vancouver
- Kirklees Neighbourhood Housing
- LBC London Bridge City & Cotton Centre
- Lincolnshire Primary Care Trust
- St Luke's Hospital, Middlesbrough
- Wellburn Care Homes, United Kingdom



## Product installation

Properly fitted and adjusted, Powermatic® and Powermatic® Free Swing will enhance the safety and comfort of a building for all of its occupants and provide maintenance-free service for many years following installation.

# Installation & adjustment

Correct installation is essential to ensuring that Powermatic® and Powermatic® Free Swing perform to their maximum capabilities and continue to do so for many years.

On-site installation is no more demanding than the fitting of a mortice lock and requires straightforward joinery skills. Naturally, Powermatic® and Powermatic® Free Swing are supplied with an easy to follow, step-by-step instruction booklet.

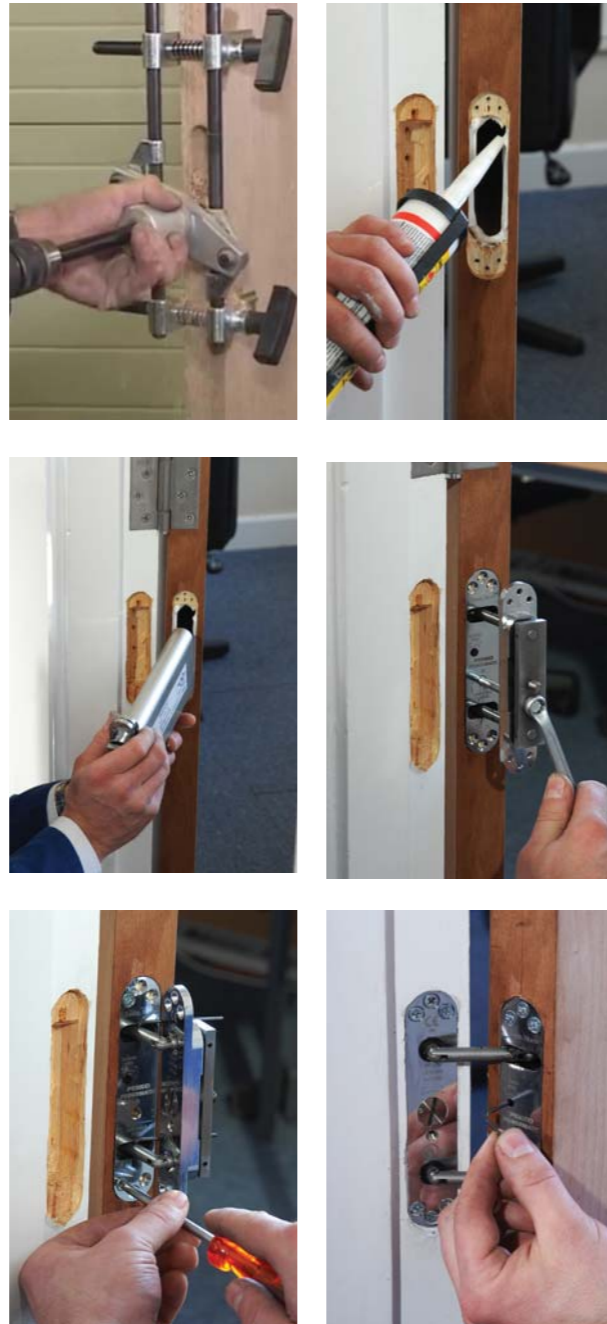
Further installation assistance can be obtained by visiting the dedicated product website ([www.perko-powermatic.co.uk](http://www.perko-powermatic.co.uk)), where the instruction booklet is available for download and demonstration videos are also available.

For multiple door installations, we recommend the use of a morticing tool, which can be obtained from Samuel Heath. The website also features a demonstration video of an installation using the morticing tool.

Once installed, the closing speed and latching action can be adjusted to suit specific requirements. Please note that in fire door applications, the latching action should not be adjusted from the setting that has been pre-set at our factory.

## Factory prepared doors and doorsets

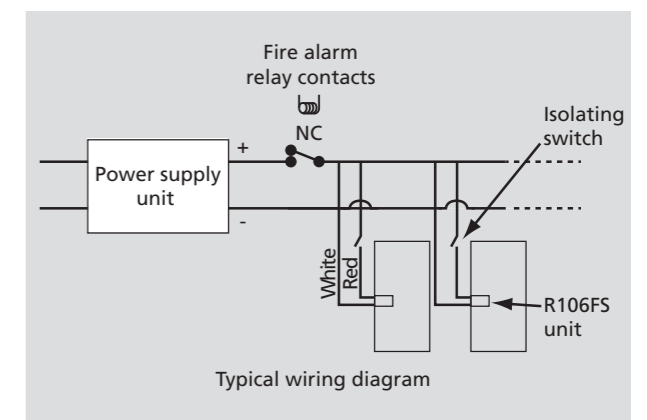
For larger projects, door preparation for Powermatic® and Powermatic® Free Swing are undertaken as part of the door manufacturing process. Technical information, together with on-site assistance and advice, is available for door manufacturers to assure effective and precise preparation, which can make a significant contribution to installation efficiency for multiple contracts.



## Powermatic® Free Swing

Powermatic® Free Swing is linked to the building's 24-volt fire alarm system. Power from the power supply unit(s) is delivered to the door closer via a fire-rated conductor hinge or concealed loop, as shown in the diagram to the right.

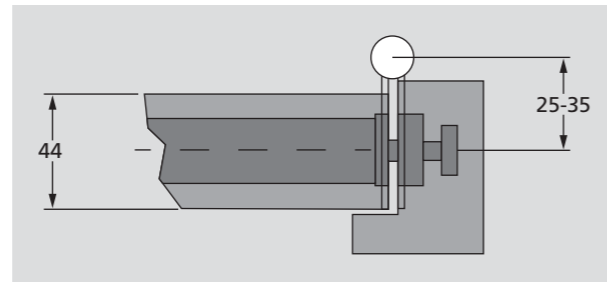
Each door closer draws 0.9 amps to activate the solenoid within the mechanism when the power to the closer is initially switched on. This draw reduces to 0.1 amps after two seconds.



# Door configurations

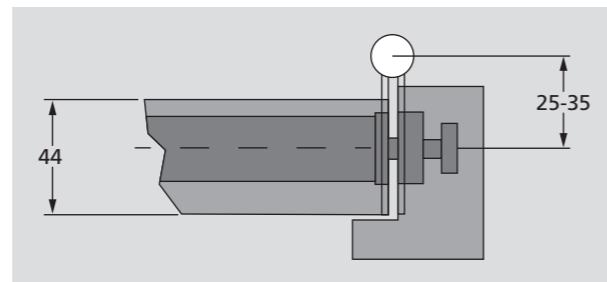
## Standard door

Diagram shows Powermatic® installed in a typical door of 44mm thickness mounted on 'standard' butt hinges. Note that the closer is installed centrally within the door. The critical dimension is the distance between the centre of the hinge knuckle and the centre of the door closer's face plates located in door and frame, which must be between 25 and 35mm.



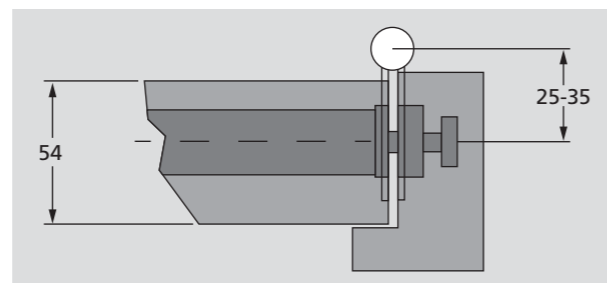
## Projecting hinges

Diagram shows Powermatic® installed 'offset'. This may be required when fitting the closer to doors hung with projecting hinges to achieve the required distance of 25 to 30mm between the centre of the hinge knuckle and the centre of the door closer face plates located in door and frame.



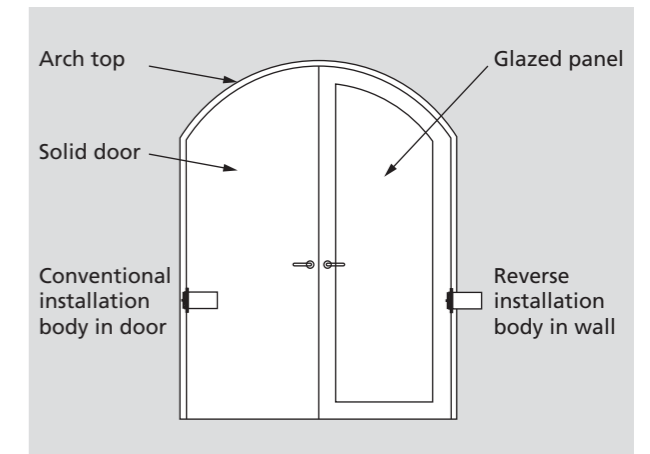
## Thicker door

Diagram shows Powermatic® installed in a door of 54mm thickness. Note that the closer is installed in an 'offset' position within the door's depth to achieve the critical distance of 25 to 35mm between the centre of the hinge knuckle and the centre of the door closer's face plates located in door and frame.



## Shaped doorheads

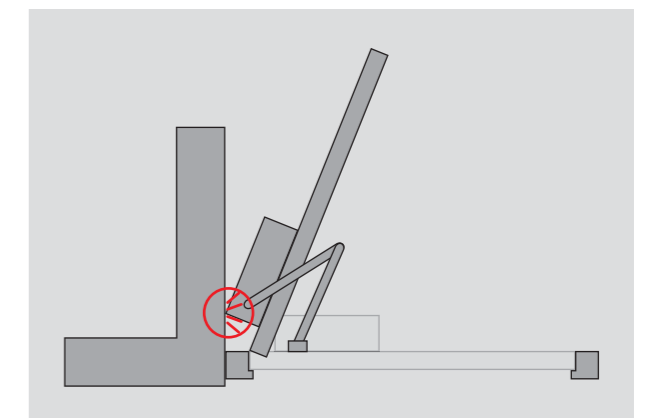
Thanks to the fact that Powermatic® and Powermatic® Free Swing are fitted within the door jamb, they are ideal for use with arched or shaped door heads.



## 90° reveals

The absence of protruding mechanical control arms and surface mounted boxes means that Powermatic® and Powermatic® Free Swing offer a solution to situations where door clearance is restricted, such as with 90° reveals.

This solution is ideal for use on hotel bedroom entrance doors.



## Model doors

Purpose-made model doors are available for both Powermatic® and Powermatic® Free Swing, offering an effective sales, point-of-sale and demonstration resource.



## Morticing tool

The morticing tool kit (order code RX98.XX) is highly recommended for multiple on-site door installations. Comprising a jig and routing tools, the kit enables doors to be morticed quickly and accurately.

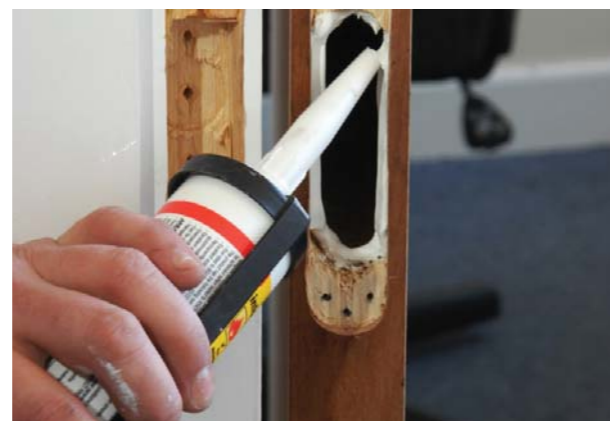


## Intumescent mastic

Alfacryl FR Intumescent Acrylic (order code R99.XX) is a one part acrylic emulsion sealant giving good fire resistance to BS 476 Part 20.

## Intumescent pads

When using Powermatic® Free Swing on fire doors, intumescent pads are factory fitted to the door fixing plate and terminal block cover.



## Hold-open devices

Powermatic® is particularly well-suited for use with separate electrically powered hold-open devices and can often provide an easier and more economic solution than other closers thanks to its mid-height location within the door.

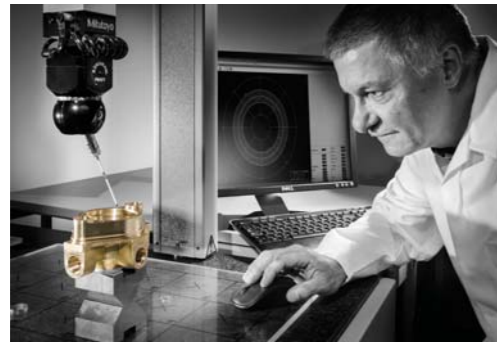
Best practice for the installation of wall mounted electro-magnetic hold-open devices stipulates that the device should be positioned at a point which minimises stress on the door assembly. Ideally, the hold-open device should be mounted at the same level as the door closer to avoid imposing twisting forces on the door assembly.



## Concealed hinges

Powermatic® and Powermatic® Free Swing are suitable for use with concealed hinges in certain situations. Please contact our sales office for advice on specific installations.





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## SAMUEL HEATH

Leopold Street  
Birmingham  
England  
B12 0UJ

T: +44 (0)121 766 4200  
F: +44 (0)121 772 3334  
[info@samuel-heath.com](mailto:info@samuel-heath.com)

London Showroom  
1st Floor, North Dome  
Design Centre Chelsea Harbour  
London  
SW10 0XE

T: +44 (0)20 7352 0249  
[showroom@samuel-heath.com](mailto:showroom@samuel-heath.com)