MAINTENANCE MANUAL



Miles Architectural Ironmongery Ltd Unit 4 Duckmoor Road Industrial Estate Bristol BS3 2BJ

MILES ARCHITECTURAL IRONMONGERY LTD MAINTENANCE MANUAL

MAINTENANCE OF HARDWARE FITTED ON TIMBER FIRE & ESCAPE DOORS

1 Introduction

- 1.1 Regulatory reform (fire Safety) order 2005 It replaces most fire safety legislation with one simple order. It means that any person who has some level of control in premises must take reasonable steps to reduce the risk from fire & make sure people can safely escape if there is a fire. The order applies to virtually all premises & covers nearly every type of building. It does not apply to peoples private homes, including flats in a block or house. The following points are reflecting the previous legislation prior to the RRo & the relevant information for your building can be extracted from: www.firesafetyguides.communities.gov.uk & we can also give advice/support.
- **1.2** Doors designated as being on a fire route exit or fire or smoke resisting doors have to be periodically inspected to make sure that they meet with same standards as when they were originally installed.
- **1.3** Much will depend on the general use to which the door is normally put. A door that is only used as an emergency exit may never be opened and will need periodic inspection and minor adjustment whilst a door that is used as a staff entrance or smoke break door will need more frequent inspections and maintenance.
- 1.4 The Workplace (Health, Safety and Welfare) Regulations 1992 includes requirements (Regulation 18) on the safety of doors and also requires (Regulation 5) that workplace devices and systems which could develop dangerous faults are subject to a suitable system of maintenance. "Suitable" means, among other things, that the maintenance is carried out regularly, that defects are remedied, and that records are kept.
- 1.5 Fire doors and escape doors are additionally subject to the Fire Precautions (Workplace) Regulations 1997, which contain similar provisions (Regulation 6 deals with maintenance).
- 1.6 The conclusion is that the employer should ensure that fire doors and escape doors are kept in safe working order by a properly documented system of regular maintenance, carried out by competent individuals. (There is no specific requirement as to the qualifications to be held by such individuals.)
- **1.7** Building controllers may thus include such inspections in their regular fire drills and routine fire precaution inspections.

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2 Critical Recommendations

- 2.1 The Management of Health and Safety at Work Regulations 1992 includes requirements on the competence of people employed to assist in health and safety matters, including maintenance. It is important to employ properly trained personnel.
- 2.2 For the doors to work efficiently regular and programmed maintenance must be carried out to all parts of the door. Work should only be undertaken by persons experienced in the type of work. If outside contractors are used they should sign the maintenance log maintained by the company.
- 2.3 A maintenance log should be kept and all doors given a unique number.
- 2.4 The maintenance period should be appropriate for the building; for high life risk, such as hospitals, schools, retired persons' accommodation, this may be monthly. Other buildings with low life risk may be annually. The local Fire Authority may be able to issue guidelines appropriate for each case.
- **2.5** The maintenance and replacement of components to maintain the correct performance of the doorset for the full life of the building is thus essential.

3 Commentary

- **3.1** General The most important factor is that these devices are designed to protect human life against fire and to ensure people can safely exit a building thus nothing must be done that would compromise this.
- **3.2** Building regulations and to some degree fire regulations provide a general guidance on the type of products to use. Recommendations on the inspections and maintenance for each specific device and each parts should be taken and used against all other parts fitted to each door.

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- **3.3** The type and use of doors are many and each door will need to be treated as the case dictates. The location geographically will also dictate the frequency and type of maintenance; wet salty areas will need special consideration. Wind blown debris and illicit dumping of rubbish could render an exit sealed. Doors used as staff "smoke break" exits will be subject to higher wear factors than those limited to periodic inspection.
- 3.4 Internal fire and smoke resisting doorsets are at least as important as the final exit door although it is unlikely they will have the same hardware as the final exit. However, hinges, closers, co-ordinators and seals all have as much importance. The incorrect closing action of such doors may render serious injury to the building occupants who are more likely to use this door in the course of their normal day. They are often subject to a higher degree of wear than final exit doors.
- **3.5** Vandalism and attempted forced entry will cause the majority of problems as well as misuse by building occupants.
- **3.6** Only periodic inspection will pick up these faults.
- **3.7** External doors will need inspecting during the seasonal changes to ensure continuing functionality.
- **3.8** Only parts of equal or a better standard should be fitted as running replacements or additions to fire/smoke and final exit doors; anything less could invalidate fire certificates and breach the building owners responsibility to keep the doors in safe working order. If there is concern about suitability of replacements test evidence from a competent authority should be obtained.
- **3.9** Hinges these bear the weight of the door, the whole load being applied to just two or more metal pivot devices. They should be checked for wear in the pivot pin; ensuring that the screws are tight and all are effectively holding; light lubrication may be required by local conditions. Hinges on doors in frequent use will wear quicker than those only opened for inspection.
- **3.10** Where floor spring or pivot devices are installed, careful inspection of the lower pivot should be undertaken to remove debris and any corrosive liquids deposited by inappropriate human use. The upper pivot should not show signs of wear and indicated wear must be rectified to prevent the door jamming at critical times.

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- **3.11** Door closing devices are designed and fitted to suit difference use, for instance, young person or strong air pressure. Maintenance technicians should be aware that building use may change and they should make building supervisors aware in such cases.
- **3.12** Each type and make of closer will need servicing in differing ways but pivoting arms and terminal fixings should be checked for tightness and lubrication added as appropriate. Terminal fixings into the door and frame are subject to stress and should be carefully checked.
- **3.13** Opening and closing pressures should be checked and fire or smoke seals inspected to ensure they do not foul the smooth action; hydraulic units should be checked for loss of liquid which would indicate a failing device. In the event of floor springs being used it is important that the door is in alignment with the frame, or in pairs of doors alignment of both.
- 3.14 Closing and latching speeds should be checked and adjusted as appropriate. Doors normally held open by approved devices should be inspected to ensure that the hold open action has not stressed the device. The correct opening travel should be checked to ensure that doorstops are not over stressing closing arms.
- **3.15** Hold open devices should be checked to ensure that no residual Electro magnetic energy impedes the smooth closing of doors. The periodic check should be undertaken in conjunction with fire alarm testing or by night security when such doors are routinely closed as night fire precautions. Security patrols could be made responsible for logging failed action.
- **3.16** Co-ordinators These devices are used to close rebated sets of doors in the correct order to provide an effective seal. Each type and make will differ and maintenance will check they are securely located on each part and the screw or other fixings are tight. Any pivoting parts should be checked for wear and any protruding arms checked for straightness. The function should be checked over the full range of door openings and all parts lubricated as required.

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- **3.17** Locks, latches, bolts and furniture. The wide range of products makes it impossible to be specific in maintenance needs. All fittings should be examined and checked for secure fixings; moving parts should be lubricated as defined by the manufacturer. Bolts, rods and other protrusions should be checked to ensure they are straight and undamaged. Bolts for locks and latches should be checked to ensure they are fitting centrally into their respective keeps. Parts liable to corrosive influence should be washed, lubricated and protected. Moving parts that pass through braces or shackles should be examined for wear that may cause intermittent jamming or rusting.
- **3.18** Smoke and fire seals should be examined to ensure they are unbroken and secure in the door; that the gap in the door has not moved out of tolerance or the door moved out of square so as to prevent an effective seal. Worn or damaged seals must be replaced with the appropriate product.
- **3.19** Panic and emergency exit devices. Moving parts should be inspected for signs of wear and replaced as required. Lubrication should be used where indicated, screws and all fixings should be tested to ensure they are secure. Electro magnetic and Electro actuation devices should be tested with power off to ensure their continued availability following power cuts. Security devices should be tested for correct function, particularly that they do not impede the correct operation of the door. Floor sockets, whether easy clean or dust excluding should be checked and cleaned out.
- **3.20** In almost all cases, the installed products will have been supplied complete with fixing instructions and the correct maintenance data sheets. It is important that these documents are retained by the Building Manager and used as the basis of the maintenance schedule.

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Door Closers

All door closers mechanisms are sealed for life and require little or no maintenance.

Overhead door closers should be inspected periodically (once every six months). Checks should be made to ensure there are no oil leaks, tightness of fixings and correct operation. Light oil lubricant (non-graphite) should be applied to the moving joints and exposed pivot points. Ensure that the door closers smoothly and firmly into the fully closed position overcoming any latches or seals. Make sure that the door travels freely and that the hinges are maintained in accordance with the manufacture's recommendations. To avoid slamming and possible damage to surrounding frames and support walls, adjust the latch control by following the adjusting instructions for the relevant model. It is recommended that door stops are fitted to all closers to prevent the doors opening beyond its limit and colliding with adjacent walls of frames.

The key factors are:

The Overhead Door Closers which are fixed to the doors in many cases have been tested to performance standards of EN1154 and in other cases conform to these standards.

We offer a ten-year guarantee on only a limited part of our range. All internal parts are completely immersed in oil and require no maintenance.

Problem

- A) When latching is either too slow or too fast
- B) When the closing speed slows down or speeds up.
- C) Where the back check opening angle is retarded.

Floor Springs

Floor closers should be inspected periodically (once every six months). Checks should be made to ensure there are no oil leaks, tightness of clamping points within the housing box and tightness of fixings for straps and pivots.

Light oil lubricant (non-graphite) should be applied to the moving joints and exposed pivot points. Ensure that the door closes smoothly and firmly into the fully closed position overcoming any latches or seals. Ensure that the cover plate is fixed firmly and sits with edges flush to the floor to prevent possible tripping hazards. If the cover plate is distorted in any way, the cover plate should be replaced. It is recommended that door stops or opening restrictors be fitted to all floor closers applications to prevent the door opening beyond its limit and colliding with wall or frames. For electro hold open floor closers and floor closers in wet areas such as kitchens, the sealing compound Id 58879 should be used.

Problem

- A) Where the closing speed either slows down or speeds up.
- B) When the back check open angle is retarded is retarded

Solution

Adjust the latching action as instructed. Adjust the closing and angle action as instructed. Adjust the back check angle & action all screws are sufficiently tight.

Solution

Adjust the closing action as instructed Adjust the back check angle & action. Check that all screw fixings are sufficiently tight, as instructed.

In case of the door closers fitted with special functions such as electro hold open or integrated sequence control etc. These products should be tested weekly for correct function.

Failure of the products caused or accelerated by fair wear and tear, unauthorised alteration, abnormal working conditions, wilful damage, negligence, misuse, vandalism or extreme environmetal conditions, is excluded from manufactures warranty.

The warranty is null and void if repairs are undertaken by non-authorised persons or if non-original manufactures parts are used or if the product are used in breach of specified purpose or outside the UK.

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Hinges

The importance of the hinge within the working of the door is too often overlooked. A door not properly hinged can result is sagging and dropping. It will also adversely affect the lock side. An adequate number of hinges is, therefore, always recommended. Heavy hinges of good quality should always be used on doors where high frequency service is expected.

Under no circumstances must hinges with a melting point of less than 800 degrees Celsius be used on fire resistant doors. This includes aluminium and some brass. The metal used for brass hinges must comply with BS2874 Copper and Copper Alloys Rods and Sections (other than forging stock).

Tips on the fixing and maintenance of hinges.

It is recommended that the leaf or flap with the largest number of joints be fixed to the door frame. Pins must be in true alignment.

Box-in with care, providing sufficient clearance for the door to open. The cut-outs must be equal in depth, square and plumb.

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A) If a door is binding

- B) When the door is either stiff or produces a squealing sound
- C) Where the door is not closing flush with frame

Solution

Check that all screws have been fitted and are of the correct gauge. Ensure the metal hinges are lubricated three times a year. Adjust the position of the hinges if affected by shrinkage of new timber and re-align.

CARE & MAINTENANCE OF BALL BEARING HINGES

Ball bearing hinges are supplied readily lubricated by the manufacturer to ensure smooth operation of hinge leaves when fitted to doors.

In the great majority of cases after installation there will be signs to varying degrees of clear oil seepage. If left for a period of time and particularly in high usage areas such as toilets the oil will combine with atmospheric dust and darken in colour.

To avoid the mixture of dust and oil acting as a grinding paste on the ball bearings which accelerates wear it is recommended that the product be cleaned periodically with furniture polish. How often the product is cleaned is based on the environment in which it is fitted combined with the assessment of the maintenance officer.

However, a simple monthly cleaning program will be sufficient for all low usage areas such as cupboard doors and a fortnightly program is advised for high usage areas such as toilets. This will ensure that your products life span is maximised and also visually acceptable to the environment in which it is fitted.

Once signs of seepage stop, a regular programme of lubrication should start, as the bearings will then be running dry. WD 40 or suitable alternative is recommended.

Miles Architectural Ironmongery Limited will not cover faults arising from non-compliance with the above recommendation.

Cylinders and Lever Locks

With locks, more than any other items around, the door fixing is paramount. Alignment of the strike plate is essential to ensure correct location of both the latch bolt and dead bolt.

Lock and latch cases mortised into the door too tightly, will result in key and bolt jamming.

Cylinder Locks with restricted key profile and key blank are recommended to avoid ease of duplication of keys.

Lever Locks are, generally, subject to unauthorised production of a skeleton key, unless five-lever locks to BS3621 have been specified.

Lock Cylinders should be lubricated only with Graphite, under no circumstances should oil be used, and lubrication should be done on a regular basis. One or two manufacturers recommend proprietary sprays but to date we do not have test evidence.

Pro	blem	Solution			
A)	If the latch bolt action is not smooth	Check the springing on the door handles (if spring loaded). Also, check the mortising of the lock case.			
B)	Where keys stick inside lock	Apply graphite only to the cylinder (under no circumstances must oil be used). Check the mortising of the lock case.			
C)	When the latch bolt is sticking	Check the alignment of the strike and the mortising of the lock case.			
D)	When the dead bolt is sticking	Check the alignment of the strike plate.			

Both on the lock and latch, reference should be made to tongue or lip of striking plate, which must be bevelled or radiused to assist latch bolt action.

Door Handles and Furniture Finishes

More handles are ruined by incorrect cleaning than by any other means. It is vitally important therefore to ensure that the proper care is taken in keeping the finish clean.

Dust, which is chemically active, and moisture, which is frequently acid, are the main natural hazards affecting door furniture. Simple, but regular cleaning is therefore more successful than more severe sporadic treatment.

Irreparable damage can be caused to the surface if proprietary metal polishes, harsh abrasive cleaners or emery cloths are used on an electrolytically deposited finish.

Below is a list of the main furniture finishes and the proper procedures to take when cleaning:

ANODISED ALUMINIUM

It should be noted that aluminium is not considered to be suitable for heavy duty use. These finishes should be dusted regularly. They should be washed periodically with weak detergent solutions and occasionally wiped with wax polish.

Anodised Aluminium finish is very susceptible to scratching and wearing, therefore consideration must be made when using Anodised finishes especially colour ie., Gold or Bronze. One must always bear in mind that once scratched or worn the Silver Colour will be seen. Not always suitable for External use. Also Aluminium is a very soft metal and corners when damaged can injure users or clothing by the burrs left by some damage.

See also Simulated Brass finish.

BRASS

LACQUERED (Air Dried) (Polished Brass, etc.)

Regular cleaning with warm soapy water will assist in maintaining the general appearance of the product. However, the life of the lacquer coating is limited, and will eventually deteriorate even when kept clean under normal conditions. Adverse conditions (such as sea air, industrial pollution, etc.) or repeated continual handling will cause the coating to break down more quickly.

Thus the life of the lacquer is beyond our control and cannot be guaranteed.

The purpose of lacquer is to protect the highly polished finish from the time it takes to get from the manufacturer to our warehouse & once in stock could sit on our shelves for a year or more & if not lacquered the product could be very dull by the time it is fitted to a door.

BRASS

LACQUERED (Hard) (Polished brass, etc.)

Recommendation for removing the lacquer and subsequent refinishing:

- The remaining lacquer after damage has occurred, should be removed with a good quality commercial paint stripper, which should be carefully applied. Complete removal of the lacquer will need careful manual abrasion, using steel wool after the paint stripper has been given time to soften remaining traces of the lacquer.
- 2) A quality metal polish should be applied and polishing with a suitable cloth can then be carried out.
- 3) If required, the user should now apply a quality air dry lacquer, although it should be noted that the surface life of such finishes is likely to be short if the door furniture receives heavy use. It may be equally appropriate to leave the brass polished surface uncoated.
- 4) Read carefully any claim for up to 25 year guarantee of lacquered finishes they do not cover any item touched & handled regularly.

BRASS (Not Lacquered)

Regular cleaning with warm soapy water / good quality metal polish will restore even the worst of deteriorated finishes.

Non lacquered brass is always produced to order & therefore takes longer to obtain than lacquered

STAINLESS STEEL

The corrosion resistance is due to a thin film of passive, stable chromium oxide, this film is self repairing & if damaged it will reform providing that oxygen is present to allow the reaction to occur with the chrome content of the steel therefore cleaning is essential. Stainless steel performs best when clean, cleanliness is essential for maximum resistance to corrosion.

These finishes should be dusted regularly and occasionally washed with soap and water.

It is not widely known that rust staining can occur in certain surroundings, i.e. external situations, sea air, saunas, swimming pools etc.

More frequent cleaning is required when exposed to more hostile environments.

Should rust staining occur & soapy water does not remove stains then a light cleaning with a kitchen pad similar to Scotchbrite pad will remove stains on Satin & ensure action is with the grain, being careful not damage the finish.

BRONZE

Bronze finishes should also be dusted regularly and periodically washed in warm soapy water. They should also be treated occasionally with a sparing rub of wax or furniture polish.

BRONZE ALUMINIUM See Anodised Aluminium.

BRONZE ON BRASS See Simulated Brass finishes.

NICKEL AND CHROME

Door furniture with nickel and chrome finishes should be dusted regularly. They should be washed periodically with weak detergent solutions and rubbed occasionally with a cloth dampened in paraffin or light oil.

Care should be taken when specifying nickel and chrome, this finish is porous and therefore the finish can deteriorate if subjected to unsuitable internal or external atmospheric conditions, irrespective of whether it is applied to Brass, Steel or Alloy.

STOVE ENAMELLING

These finishes should be wiped with a non-abrasive, soft cloth and a gentle cleaner.

COLOUR COATING

(Epoxy, Polyester or Polyurethane) etc.

Powder coated finishes should be cleaned with a soft cloth and any household furniture polish. Under no circumstances must industrial solvents be used.

Colour Coating is a finish which cannot be guaranteed and will deteriorate very quickly if touched and in certain coatings not suitable for external use.

SIMULATED BRASS FINISHES

Some form of brass finishing is increasingly being specified on hardware and the usual way of obtaining this finish is by Electro Plate/Lacquer/Stove coating.

Whilst these finish maybe acceptable for internal use, we cannot guarantee their durability when used externally or internally.

Although these finishes may be satisfactory in many outside applications, this will very much depend on the particular location of the hardware concerned.

This is an extremely delicate finish and can easily be damaged by cleaning and atmospheric conditions.

KICK PLATES

Fixing Instructions:

All Products must be fitted at room temperature to a clean dry surface.

Screw Fixed Where more than 4 holes, fit from the middle outwards. Do Not over tighten. Do Not use rivets.

<u>Silicone fixed</u> Apply approx. 10mm from edge all round. Add additional strips as necessary. Hold in position with masking tape until set (2 hours)

<u>Self Adhesive</u> Make sure the surface is clean and dry. Peel off backing and stick in position immediately.

IRON

Iron in any form, whether Cast or Malleable, is susceptible to rusting. During our finishing process we endeavour to cover all areas of Antique Ironmongery by first dipping into a liquid paint which is then stove dried. This is then followed by the Black Powder Coating process, which is also cured by stoving. Obviously when two areas of metal come into contact with each other an abrasive action is enacted, and sooner or later the painted surfaces are lost by the constant rubbing action. This in unavoidable during the operational activity of the article, so to prolong the good looks and keep the rusting process at bay we advise that the article is periodically wiped over with a lightly oiled cloth, and where obvious abrasive areas are visible an occasional light oiling is recommended.

We do not recommend Brass, Armour Bright or Black Bright finishes be used for exterior decor as the elements of weather will break down the lacquered surfaces and so result in either rusting or corrosion.

We strongly advise that these precautions are taken.

By adopting these simple precautions you will prolong the products life and enhance the beauty of your home.

Stainless steel / Silver sprayed aluminium Panic Bolts

The vertical and horizontal bars are Stainless steel, it is important to note that in external situations a build up will occur, the bars must be maintained on a regular basis. A clean with soapy water is usually sufficient to ensure the bars stay in a good condition and slide through the keeps.

The other exposed parts are sprayed aluminium and should be cleaned on regular occasions with soapy water, should the paint finish break down repainting is recommended.

The mechanism boxes should be filled with grease prior to fitting to the door, grease should be applied then on a regular basis to ensure good working order.

The panic bolts are not designed for external use and subsequently not guaranteed for external use, however, we believe that careful fitting and following our instructions above will give excellent use over many years.

The panic bolts must be operated and checked weekly as part of a maintenance programme.

Our panic bolts have been used in hostile environments (including swimming pools) for some years and to date we have not had any complaints.