

# OPERATION AND MAINTENANCE OF BS EN 124 IRONWORK

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Under normal UK climatic conditions and non-aggressive chemical environments, e.g. Highway applications, BS EN124-2 ironwork products generally require little maintenance due to the inherent corrosion resistance to sectional perforation. Indeed, following the loss of the industry-standard aesthetic coating due to trafficking abrasion, cast iron covers usually produce a fine oxide film on their surface that deters further oxidation of the underlying parent metal. This results in the cover and frame sections lasting many decades and which can be successfully recoated to increase longevity and improve aesthetic appeal.

## PRODUCT DESIGN VARIATIONS

Our ironwork designs employ cover or grating elements that are intended for; Lifting out from the frame and/or hinging within the frame, where the latter may include one of up to three hinged-opening directions.

Some hinged-opening designs allow the cover or grating element hinges to be repositioned [prior to installation] in order to change the hinged-opening direction

Non-hinged, Double-Triangular cover and grating elements, <1m Clear Opening, employ loose-link fasteners between two adjoining cover elements which require those cover segments to be lifted out from the frame, as a pair.

Non-hinged, Double-Triangular cover and grating elements, >1m Clear Opening, do not employ loose-link fasteners between the cover elements and therefore require lifting out from the frame as individual cover segments

Hinged, Double-Triangular cover elements which also include a cover lift-out option (i.e. Highway Halo), do not employ loose-link fasteners between the cover elements. These therefore can be lifted out from the frame individually.

## **CHAMBER ACCESS TOOLING**

Our ironwork products have been designed for safe access to underlying chamber systems using industry-standard tooling, comprising one or a combination of the following;

- BS7903-profile lifting keys (generally, large profile and closed-keyway type for manhole covers and small profile for BS5834-type surface boxes).
- \*Prising Bars (aka Pry Bars, Crow Bars).
- Allen keys for fastener removal/refitting.
- Hexagonal Socket tooling for fastener removal/refitting.
- Flat-blade screwdrivers for fastener removal/refitting.
- M16 Eyebolts for machine-only cover lift.
- Robust gloves where ironwork is to be directly handled.

\*Prising Bars and the like should be used to loosen all ironwork prior to attempting cover lifting operations.

N.B. If in any doubt about a product's tooling or access requirements, contact our Technical department on 01543 440 440 for advice and [ideally] provide a photograph of the item in question in order to aid positive product identification.

## MAINTENANCE OF MANHOLE COVERS

### 1 Coatings

Manhole Tops are usually supplied with a factory-applied barrier paint coating or bitumen paint for transit and short-term aesthetic appeal. These coatings offer no galvanic protection to the ironwork unless specifically agreed otherwise in the contract. Such coatings may be applied and re-applied throughout the life of the product, according to aesthetic requirements. For interim applications of repair coatings, we recommend the use of a brush or spray applied; Thomas Howse QAD P0090 Paint (MSDS HS1). - Please see the separate on-site application of coatings document.

N.B. When applying a repair coating, ensure the provision of any necessary safety measures, including PPE, and ensure the application method is suitable for the surroundings as well as the ironwork.

### 2 Cleaning

Where chamber access is gained by the temporary removal of cover elements, it is always good practice to remove any debris from and brush-clean all contact points between the cover and frame components. At the same time, the remaining debris in any Lifting Keyways can be cleaned-out by inverting the cover element(s). This cover inversion procedure also allows the loose-link fastener components between double-triangular covers to be inspected and replaced, where they indicate any signs of distress. Similarly, this is also a good time to conduct an inspection of the cover(s) structural support beams.

N.B. When contacting Wrekin to order replacement locking components or loose-link fasteners for double-triangular covers, please photograph the cover pair (top and underside view) and note the text markings on the cover top surface as these can be useful for positive product identification.

## **MAINTENANCE OF GULLY GRATES**

### 1 Coatings

Gully Gratings are usually supplied with a factory-applied barrier paint coating or bitumen paint, for transit and short-term aesthetic appeal. These coatings offer no galvanic protection to the ironwork unless specifically agreed otherwise in the contract. Such coatings may be applied and re-applied throughout the life of the product, according to aesthetic requirements.

### 2 Cleaning

Where gully chamber access is gained by the temporary removal or hinging of the grating element(s), it is always good practice to remove any debris from and brush-clean all contact points between the grating and frame components. This cover inversion procedure also allows the loose-link fastener components between double-triangular covers to be inspected and replaced, where they indicate any signs of distress. N.B. When contacting Wrekin to order replacement components, please photograph the grating (top and underside view) and note the text markings on the grating top surface as these may be requested by Wrekin personnel for positive product identification.

### 3 Condition Assessment

If the ironwork product is being inspected due to noisy or unstable operation resulting from foundation or chamber deterioration, before re-installing it, the component parts of the ironwork should be examined for signs of cracking. Where cracks are revealed in the grating [underside] structural support beams or frame seats, such assemblies should be replaced with completely new products and not reused. N.B. Cracks in ironwork are usually evidenced by preferential oxidation of the crack fissure resulting in corrosion residue (rust) being deposited around it. If the inspection is due to excessive 'grating-drop' in the frame, then unless the product has replaceable seating components, the whole assembly will have to be replaced.

## ACCESSORY PARTS

1 Flood & Odour Control Plates (F&OCP) and Low Leak Seal Plates (LLSP)  
F&OCP are factory-fit accessories located under manhole top frames of which, only their chamber-access lid fasteners are replaceable. Routine cleaning is not required but it is beneficial for the F&OCP top surface to be brush cleaned following the removal of the manhole top cover elements in order to remove accumulated corrosive media and to facilitate access to the F&OCP removable lid component.

LLSP (Unite-Evo & Highway brands only) are factory or retrofit accessories located inside the frame component of a manhole top assembly and are replaceable. Routine cleaning of the LLSP is not required except where hydrocarbon spillage is likely to have contaminated the elastomeric seal element (as this can cause swelling and dislodgement of the seal) in which case, the LLSP should be cleaned using a mild soap-based detergent prior to re-coating the elastomeric seal with a drinking water compatible Silicone grease or grease compliant to BS6920.

N.B. When contacting Wrekin to order a replacement LLSP, please photograph the item in-situ and note the text markings on the manhole top surface as these can be useful for positive product identification.

### 2 GritBlocker

GritBlocker is a factory or retrofit accessory which may be inserted into a clean, closed-cavity Lifting Keyways of a manhole top in order to prevent it from filling with detritus that might otherwise prevent Lifting Key insertion. When inserted into a Lifting Keyway, GritBlocker requires no routine maintenance other than the removal of any debris that may have collected above it (during service), prior to Lifting Key insertion.

### 3 Resilient material seating inserts and seals

These can be removable parts or features of an ironwork assembly that act as the intermediate contact or seal between the cover and frame components. The removable parts are usually of a non-metallic material (e.g. rubber, etc.) and are often designed to be replaceable where found to be worn out. Otherwise, no

routine maintenance is required but good practice should ensure that they are cleaned with a mild detergent, in-situ, whenever cover or grating elements are opened/removed for chamber access. If seatings are also intended to act as or form a seal (including labyrinth\* types), once cleaned, they should be re-coated (or filled\*) with a drinking water compatible Silicone grease or grease compliant to BS6920.

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