



The New Highway® Ironwork Range



WREKIN
Intelligent products for civil engineering

A little bit about us...

At Wrekin, we design, manufacture and supply highway ironwork, geotextiles, geogrids and other ground engineering products.

Our innovative approach to product design and commitment to quality and service has firmly established our position as a market leader in safety critical civil engineering solutions.

With more than 30 years of technical expertise and leadership, we have an established range of unique, patented products to perfectly suit both specifier and contractor.

Wrekin's heritage is highway ironwork. Our core business is the design, manufacture and supply of award-winning gully grates and manhole covers. Our ironwork is tough, and built to sustain the increasing demands on our roads and infrastructure. We are proud to work in partnership with leading large water and telecommunication utilities across the UK, ensuring motorists, pedestrians and those travelling by trains and aeroplanes enjoy safe, smooth and high-quality journeys.

Another significant area of our business is geosynthetic products, which play an integral role in the majority of building, civil and marine engineering projects. We offer geosynthetic solutions for ground stabilisation, reinforcement, erosion control, drainage, tree and grass protection and weed suppression.





Highway[®] Range

Our Highway[®] ironwork range is durable, reliable, simple to specify, easy to install and operate.

We know from talking to our customers they value high quality products with straightforward ranges and support on hand to help select the right solution.

Our new Highway[®] range is a triumph of engineering, practicality and simplicity. Available in a wide range of sizes and depths, Highway has been thoughtfully designed and engineered to be the easiest range of manhole covers, gullies and ancillary products to specify and install on the market.

The range exceeds the most demanding European standards and guidelines from national highway authorities.

- Fully compliant with the most rigorous specification standards, including HA104/09, BS7903 and BS EN 124:2015
- Stable double-triangle gully gratings with anti-theft, reversible single-hinge opening
- Mechanical lifting provisions and cover indexing
- All popular configurations stocked as standard, and supplied to our merchant network from central locations in England and Scotland

With Highway[®], Wrekin Products has brought together 30 years of ironwork expertise and skilful design to create the world's first ironwork range to be Kitemarked to the revised standard BS EN 124:2015.

Even before the official launch of the range in November 2016, Highway[®] had already been selected for use on the Aberdeen Bypass, the largest road project in the UK.

Testimonials

"We have worked in partnership with Wrekin for many years, developing new products to suit our needs. The relationships are very important to us, as they enable us to deliver excellent service for our customers. We look forward to continuing to work with Wrekin for many years to come."

Caroline Chapman

Procurement Business Partner - Wholesale Water



"BSI is pleased to confirm Wrekin Products as the first company to achieve the coveted BSI Kitemark to BS EN124:2015, the standard for gully tops and manhole tops for vehicular and pedestrian use. Through initial type testing and assessment of their production processes, Wrekin have demonstrated their commitment to the consistent manufacture of products which comply to BS EN124:2015. Unique to BSI, the BSI Kitemark is recognised globally as an independent mark of quality, safety and trust."

Grahame Wackett

Construction Products Group Manager

























"Highlighting its reputation as an influential supplier of innovative solutions in civil engineering, Wrekin Products is listed in the London Stock Exchange's '1000 Companies to Inspire Britain' report. The report, published in 2016, recognises the UK's most forward-thinking and successful small to medium enterprises."

London Stock Exchange Group

1000 Companies to Inspire Report 2016



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Hello.

Whether you are looking to create strong infrastructure or a new landscape Wrekin has the civil engineering expertise and patented products to bring your vision to life.

We are the UK's leading manufacturer of manhole covers, gully grates and geosynthetic products. More than 90 per cent of our ironwork range contains unique patented features.

I am proud to say we are a family business, with 30 years' experience in the sector. We have grown in every one of those 30 years, and plan to continue to employ the best people, design and make reliably outstanding products and offer the kind of customer service we like to receive ourselves.

We believe sustainable manufacturing is good manufacturing. At the heart of our culture is sustainability, built on our three core business pillars – resources, prosperity and our people.

Our friendly teams will help you discover which intelligent civil engineering product is right for your project. Contact us today to talk it through.



Stan Turner
Managing Director - Wrekin Products



National & Local Authorities

The Highway® range of manhole covers and gully gratings exceeds all requirements contained within HA104/09, part of the Design Manual for Roads and Bridges, the standard specified by national highway and local authorities.



An agency of  The Scottish Government



Llywodraeth Cynulliad Cymru
Welsh Assembly Government



Local Authorities

Good transport networks play a vital role in our communities, providing access to employment opportunities, healthcare and education, as well as unlocking economic opportunities in tourism and leisure.

Local Authority Priorities

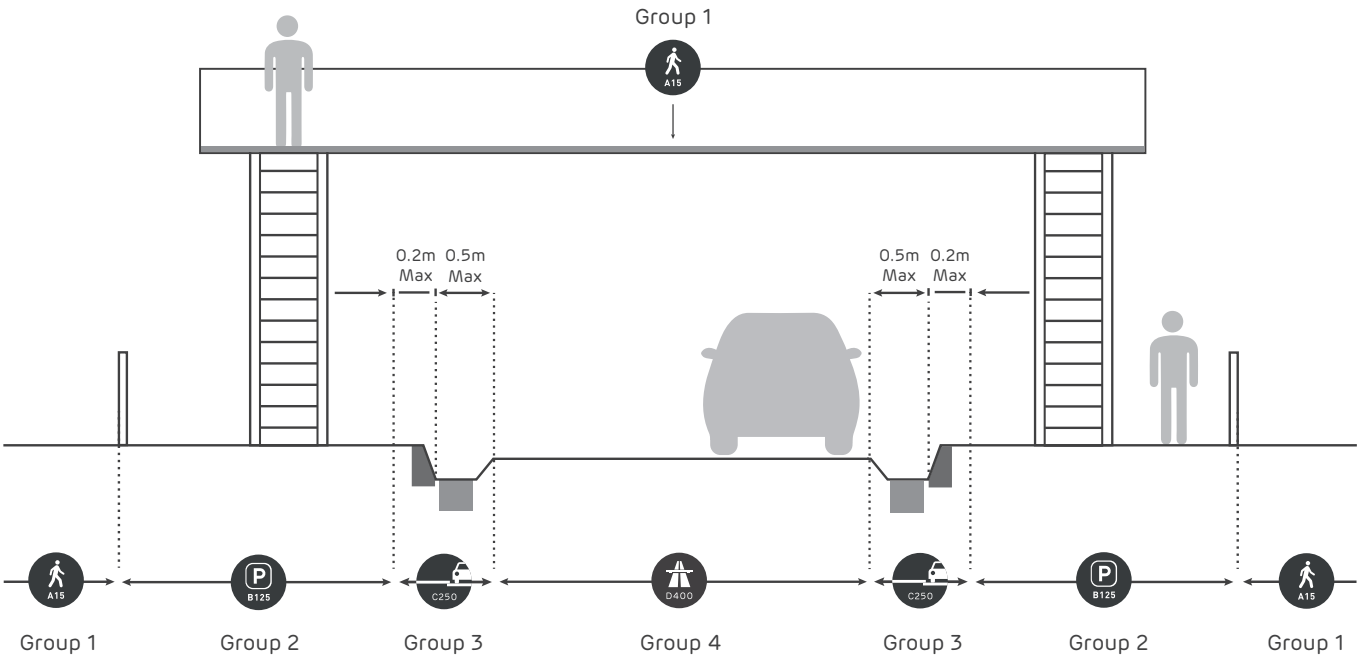
- ✓ Boosting economic growth
- ✓ Improving the local environment
- ✓ Safe, and sustainable transport



Standard Classification

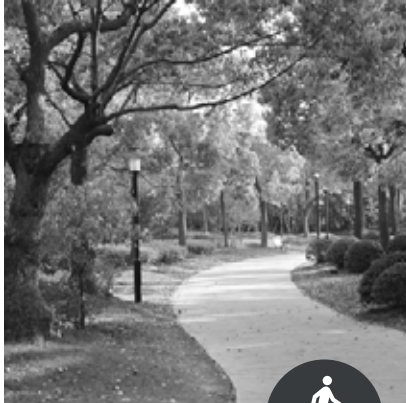
The diagram below is taken from BS EN 124:2015 and illustrates the minimum class of products that can be installed for a particular location. All Highway® products are tested to D400 and are therefore suitable for use in highway locations.

WHERE THERE IS ANY DOUBT THE STRONGER CLASS SHOULD BE SELECTED



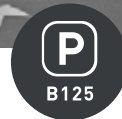
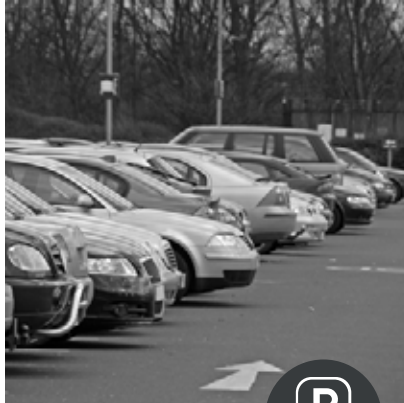
LOADING	BS 497 GRADE	BS 497 TEST LOAD	BS EN 124 CLASS	BS EN 124 TEST LOAD
Areas imposing particularly high wheel loads - Group 6	-	-	F900	900kN
Areas imposing high wheel loads - Group 5	-	-	E600	600kN
Carriageways of roads (heavy duty) - Group 4	D A	400kN 350kN	D400	400kN
Gully tops in kerbside channels of roads - Group 3	-	-	C250	250kN
Footways, pedestrian areas etc - Group 2	B	150kN	B125	125kN
Areas inaccessible to motor vehicles - Group 1	C	10kN	A15	15kN

Product Class Selection



Group 1 - Class A15

Access covers and gratings capable of withstanding a 1.5 tonne test load. For use in areas which can only be used by pedestrians and cyclists



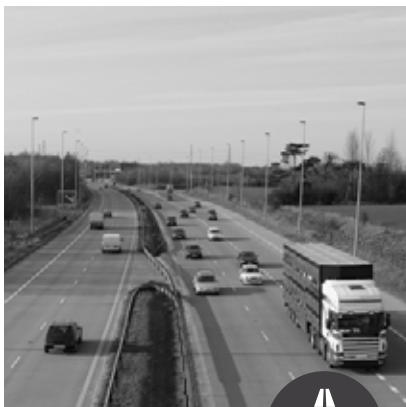
Group 2 - Class B125

Access covers and gratings capable of withstanding a 12.5 tonne test load. For use in footways, pedestrian areas and comparable areas such as car parks or car decks.



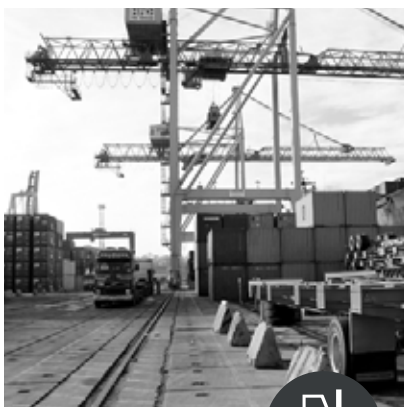
Group 3 - Class C250

Access covers and gratings capable of withstanding a 25 tonne test load. For installation no more than 500mm from the kerb face into the carriageway.



Group 4 - Class D400

Access covers and gratings capable of withstanding a 40 tonne test load. For use in areas where pneumatic-tyred cars and lorries have access, including carriageways, hard shoulders and pedestrian areas. All units to be either non rock or silent in operation.



Group 5 - Class E600

Access covers and gratings capable of withstanding a 60 tonne test load. For use in areas where heavy wheel or high point loads from pneumatic and non-pneumatic-tyred vehicles are imposed, such as loading areas or docks.



Group 6 - Class F900

Access covers and gratings capable of withstanding a 90 tonne test load. For use in areas where very heavy wheel or high point loads from pneumatic and non-pneumatic-tyred vehicles are imposed, such as aircraft pavements.

British Standards and HA 104/09

BS EN 124:1994

"Gully tops and manhole tops for vehicle and pedestrian areas."

- Prescribes safety-related design requirements and test loads relating to the intended installation location.
- Covers all prescribed cast iron and steel material products up to 1000mm Clear Opening.
- Its load categories have proven to be an adequate guide to conforming products' structural integrity but inadequate to ensure consistent service durability.
- The Standard requires that all products claiming conformance shall carry a Third Party Certification Mark as verification of their conformance. Wrekin use BSI's Kitemark for this purpose on all of its own designs.
- All of Wrekin's Kitemarked castings conform to this Standard.



PLEASE NOTE:

From March 2017 this will be superseded by the 2015 standard. The new standard includes extra safety requirements. Wrekin was the first company to have products kitemarked with the new standard

BS EN 124:2015

"Gully tops and manhole tops for vehicle and pedestrian areas. Parts 1 to 6."

- Contains the essence of the 1994 standard together with the introduction of some new, additional tests. For iron castings, these additional tests comprise of cover stability under edge loads and resistance to unauthorised chamber access by minors.
- Separate requirements for products made of different materials.
- This standard is published and available for purchase from BSI.
- The European Commission has yet to harmonise this standard and therefore CE marking does not currently apply.
- All of Wrekin's castings are Kitemarked to this standard.
- Wrekin was the first company globally to have its ironwork range Kitemarked to this standard.



For more information on any of the standards listed below
please call our technical team on 01543 440440

HA 104/09

Highways England DMRB Volume 4 Section 2 Part 5, HA104/09
Advice Note "Chamber Tops and Gully Tops for Road Drainage and Services: Installation & Maintenance"

- Based on leading research, it makes requirements over and above those in BS EN 124.
- The requirements include specific frame depths, skid resistance, flange widths and bearing pressure, installation and mortar requirements

BS7903:1997

"Guide to selection and use of gully tops and manhole covers for installation within the highway."

- Guidance document derived as a supplement to BS EN 124:1994.
- Developed, in essence, to cover the main differentials between the withdrawn BS 497 standard and the publication of BS EN 124:1994.
- Its recommendations have largely been superseded by research and development advances since its publication. In recognition of this, BSI are due to revise the standard.
- Due to its 'guidance' status, no third party certification scheme is available for it.



Range of Highway® Products

Manhole Covers



450mm x 450mm x 150mm Highway MHC



600mm x 450mm x 150mm Highway MHC



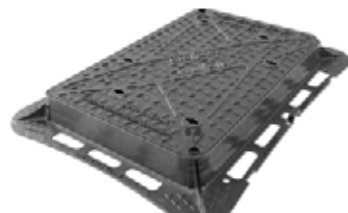
600mm x 600mm x 150mm Highway MHC



600mm x 600mm x 150mm Highway MHC



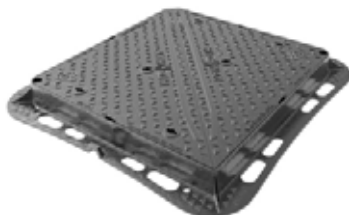
675mm x 675mm x 150mm Highway MHC



900mm x 600mm x 150mm Highway MHC



750mm x 750mm x 150mm Highway MHC



900mm x 900mm x 150mm Highway MHC



1220mm x 675mm x 150mm Highway MHC

Gully Gratings



450mm x 450mm x 150mm Highway Gully Kerb



600mm x 450mm x 150mm Highway Gully



600mm x 600mm x 150mm Highway Gully



430mm x 370mm x 150mm Highway Gully



450mm x 450mm x 150mm Highway Gully



1000mm x 450mm x 150mm Highway Gully

All covers and gullies are available with 100 and 150mm frame depths.

Catch Pits



1000mm x 450mm x 150mm Highway Catch Pit



600mm x 450mm x 150mm Highway Catch Pit



600mm x 600mm x 150mm Highway Catch Pit

V Gully Gratings



600mm x 600mm x 150mm Highway V Gully



675mm x 1220mm x 150mm Highway V Gully



1220mm x 675mm x 200mm Highway V Gully



Highway manhole and gully frames have been designed to engage and work in harmony with the UniPak foundation system. The system includes engineered, factory-made polymer resin packing plates, polymer resin stepped wedges and polymer resin bedding mortar.



Highway®: Making life easier

Specifically created to exceed even the most demanding standards and guidelines from national highway authorities, the Highway® ironwork range is suitable for **all** highway environments.

The range is unrestricted in where it can be installed, with outstanding finish and performance.

We know from talking to our customers they value high quality products with straightforward ranges and support on hand to help select the right solution.

It has been developed to be straightforward to select and therefore ideal for merchants to hold in stock. The range is available from more than 2,000 outlets across the UK.

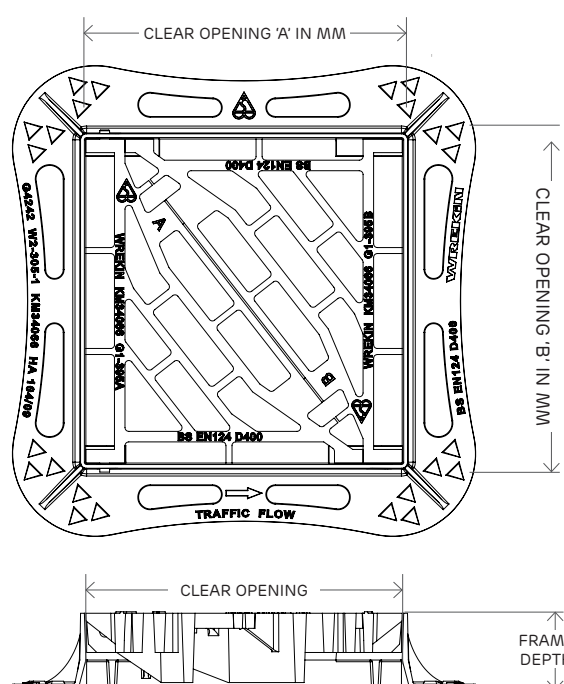
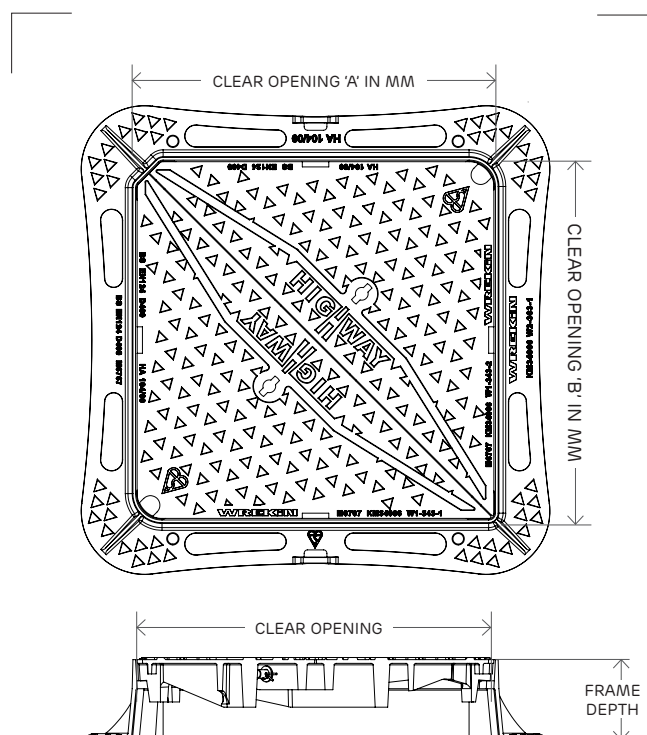
When ordering we will need to know the following:

Clear opening size:

Measure the dimension of the opening inside the brickwork or chamber. This will be the same size as the opening inside the frame we supply. **Do not measure** the size over the top of the existing frame or the frame size.

Depth:

Let us know any restrictions you have for the size and depth of your frame. HA104/09 states all trunk road and motorway ironwork should be 150mm deep.



The Highway® Range

Manhole Covers

Gully Gratings

Catch Pits

V Gully Gratings



Highway[®] Manhole Cover Range

HIGHWAY[®]

Wrekin's Highway[®] manhole covers are designed and manufactured to meet the enhanced requirements of national highway authorities' HA 104/09 specification.

The Highway[®] range of access covers and gully grates conforms to BS EN 124:2015 and also includes patented safety provisions and design features to ensure safe and robust performance.



Highway[®] Manhole Cover Exploded Diagram:

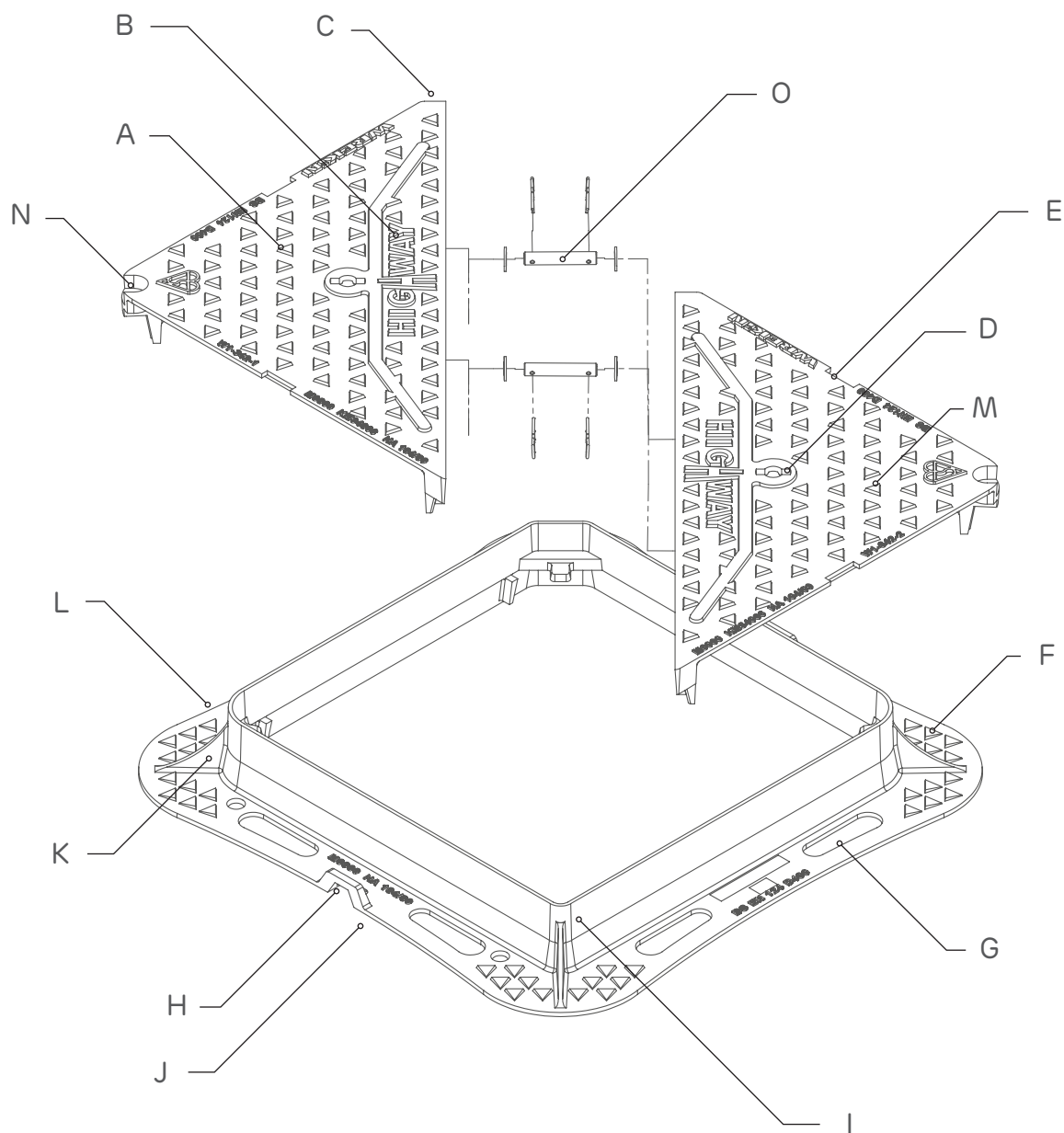
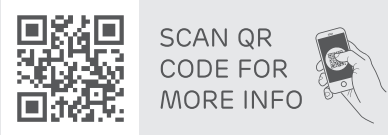


DIAGRAM KEY					
A	Chequer pattern	G	Mortar engagement apertures	M	Marking area (if required)
B	Branding	H	Lifting provision	N	Locking provision
C	Indexed corner	I	True frame depth	O	Link pins
D	Non slip closed Keyway	J	No base protrusions		
E	Prising slot	K	Load transfer ribs		
F	Top flange grip	L	Enlarged load dispersal zone		



- Available options:
- Locked
 - Badged (e.g. 'SW', 'FW' etc.)
 - Ventilation Holes
 - Sealing Plate
 - Safety Grille
 - Anti-slip Coating (60+ PSRV)



1. Wrekin Products Ltd is continually seeking to improve our products and therefore reserves the right to alter product specifications without prior notice.
2. It is the responsibility of all users to satisfy themselves the above data is current.
3. Installation details are available on request.
4. Published September 2016 - Version 2.AC

Illustrated: DMTOD4/6767/KH



Highway[®]

D400 & HA104/09 Manhole Covers

WREKIN PRODUCTS STOCK CODE	ITEM DESCRIPTION	CLEAR OPENING (C x D mm)	BASE OPENING (F x G mm)	OVERALL FRAME (A x B mm)	FRAME DEPTH (E mm)
DMTOD4/4545/KH	450 x 450 x 100mm Double Tri Cover, Group 4	450 x 450	474 x 474	664 x 664	100
DMTOD6/4545/KH	450 x 450 x 150mm Double Tri Cover, Group 4	450 x 450	474 x 474	664 x 664	150
DMTOD4/6045/KH*	600 x 450 x 100mm Double Tri Cover, Group 4	600 x 450	624 x 474	814 x 664	100
DMTOD6/6045/KH*	600 x 450 x 150mm Double Tri Cover, Group 4	600 x 450	624 x 474	814 x 664	150
DMTOD4/6060/KH	600 x 600 x 100mm Double Tri Cover, Group 4	600 x 600	622 x 622	810 x 810	100
DMTOD6/6060/KH	600 x 600 x 150mm Double Tri Cover, Group 4	600 x 600	622 x 622	810 x 810	150
DMTOD4/6767/KH	675 x 675 x 100mm Double Tri Cover, Group 4	675 x 675	697 x 697	885 x 885	100
DMTOD6/6767/KH	675 x 675 x 150mm Double Tri Cover, Group 4	675 x 675	697 x 697	885 x 885	150
DMTOD4/7560/KH	750 x 600 x 100mm Double Tri Cover, Group 4	750 x 600	774 x 624	964 x 814	100
DMTOD6/7560/KH	750 x 600 x 150mm Double Tri Cover, Group 4	750 x 600	774 x 624	964 x 814	150
DMTOD4/7575/KH	750 x 750 x 100mm Double Tri Cover, Group 4	750 x 750	775 x 775	965 x 965	100
DMTOD6/7575/KH	750 x 750 x 150mm Double Tri Cover, Group 4	750 x 750	775 x 775	965 x 965	150
DMTOD4/9060/KH	900 x 600 x 100mm Double Tri Cover, Group 4	900 x 600	924 x 624	1115 x 815	100
DMTOD6/9060/KH	900 x 600 x 150mm Double Tri Cover, Group 4	900 x 600	924 x 624	1115 x 815	150
DMTOD4/9090/KH	900 x 900 x 100mm Double Tri Cover, Group 4	900 x 900	927 x 927	1130 x 1130	100
DMTOD6/9090/KH	900 x 900 x 150mm Double Tri Cover, Group 4	900 x 900	927 x 927	1130 x 1130	150
DMTOD4/1267/KH	1220 x 675 x 100mm Double Double Tri Cover, Group 4	1220 x 675	1245 x 700	1460 x 895	100
DMTOD6/1267/KH	1220 x 675 x 150mm Double Double Tri Cover, Group 4	1220 x 675	1245 x 700	1460 x 895	150

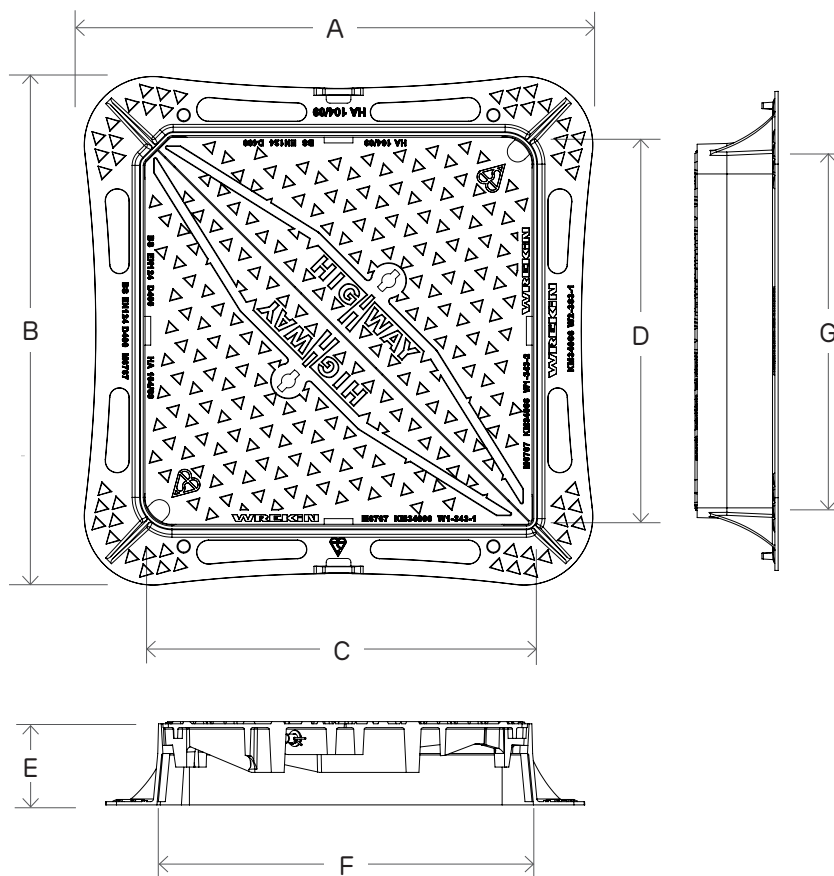
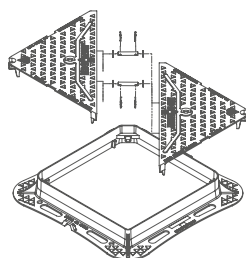
* Call for more details













SPECIFICATIONS:

Dimensions:

Diagram Key	
A x B	Overall Frame Size
C x D	Clear Area
F x G	Base opening
E	Frame Height



-  For use in a Group 4 D400 class environment
-  Compliant with BS EN 124
-  Complies with Highways England specification HA 104/09
-  Third party certified by BSI
-  Enlarged frame corners help to dissipate the load
-  Non rock - Three point suspension for non rock stability
-  Safety keyway - Ensures key's secure in keyway when lifting
-  Indexed covers ensure correct fitting
-  Manufactured from strong and highly durable ductile iron
-  Mechanical lifting points

Highway® Group 3 Gully Gratings

HIGHWAY®

Wrekin's Highway® group 3 gully gratings are designed and manufactured to exceed the enhanced requirements of national highway authorities' HA 104/09 specification.

The Highway® range of access covers and gully grates conforms to BS EN 124:2015 and also includes patented safety provisions and design features to ensure safe and robust performance.



Highway® Gully Grate Exploded Diagram:

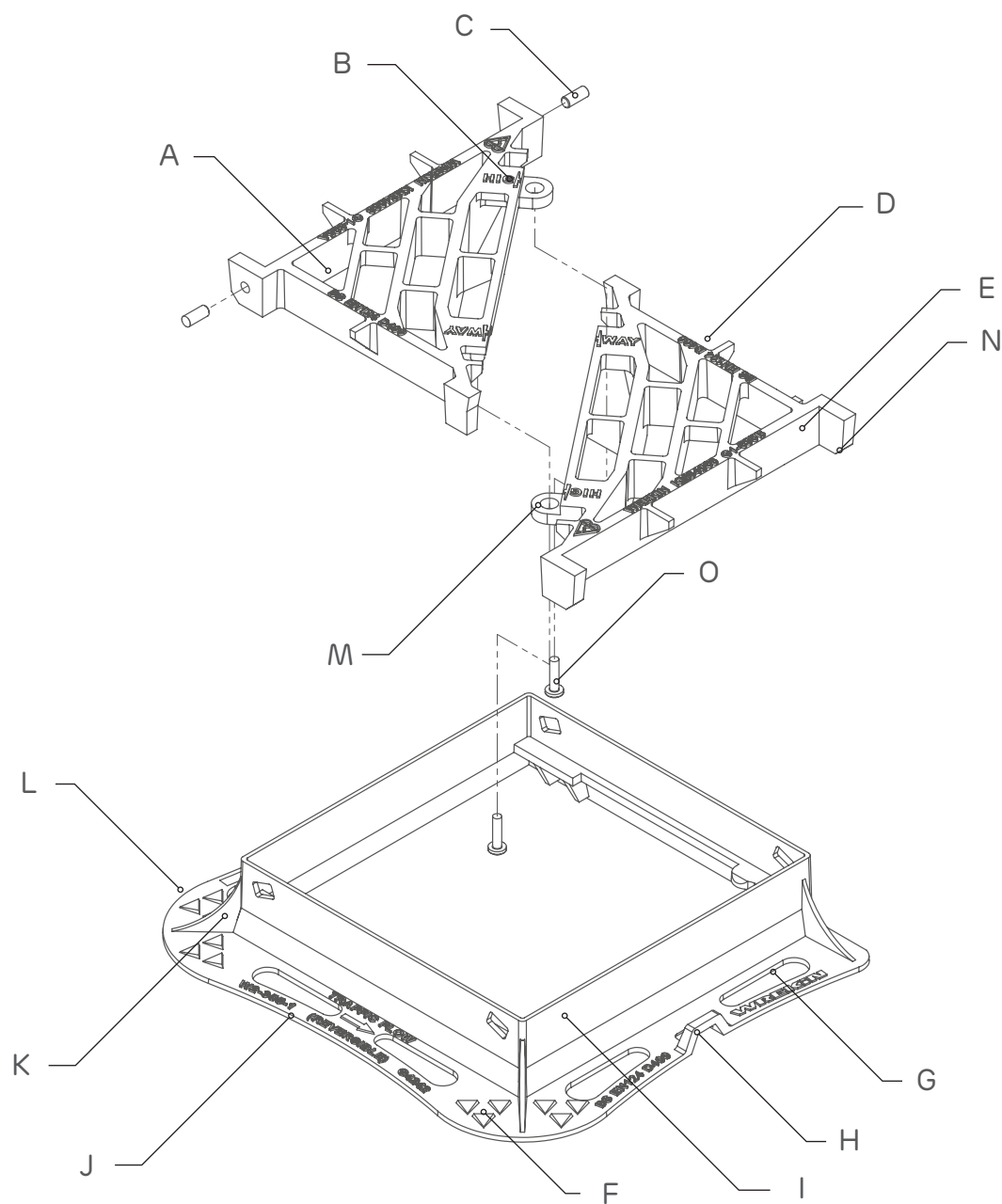


DIAGRAM KEY					
A	Optimised waterway area	G	Mortar engagement apertures	M	Articulation links
B	Branding	H	Lifting provision	N	Locking provision
C	Captive hinge pin	I	True frame depth	O	Link pins
D	Required markings	J	No protrusions		
E	High strength perimeter beams	K	Load transfer ribs		
F	Top flange grip	L	Enlarged load dispersal zone		



Available options:

- Locked
- Anti-slip Coating (60+ PSRV)



SCAN QR
CODE FOR
MORE INFO



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2. It is the responsibility of all users to satisfy themselves the above data is current.
3. Installation details are available on request.
4. Published November 2016 - V1.CE

Illustrated: DGHTOD4/6060/KH



Highway®

D400 & HA104/09 Group-3 Gully Grates - Three Flanged

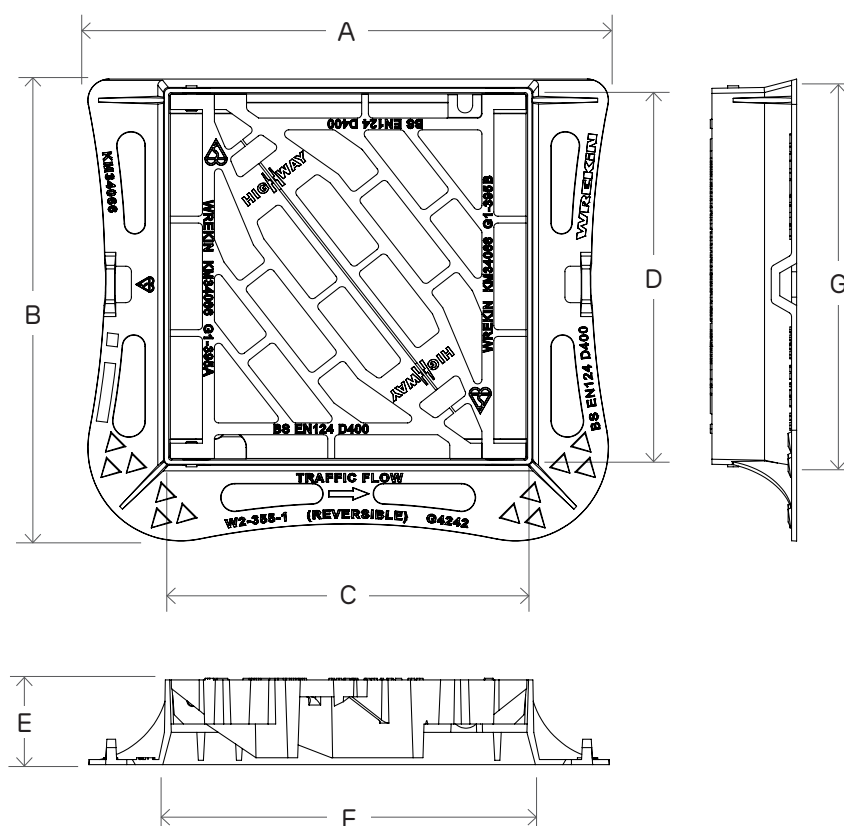
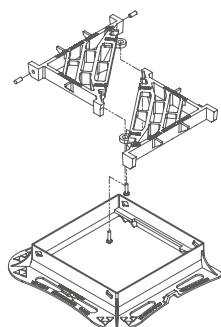
WREKIN PRODUCTS STOCK CODE	ITEM DESCRIPTION	CLEAR AREA (C x Dmm)	BASE OPENING (F x Gmm)	OVERALL FRAME (A x B mm)	FRAME DEPTH (E mm)	WATERWAY (cm²)
DGHTOD4/4242/ KHA	425 x 425 x 100mm Double Tri Gully, Group 3	425 x 425	450 x 450	560 x 520	100	1200
DGHTOD6/4242/ KHA	425 x 425 x 150mm Double Tri Gully, Group 3	425 x 425	450 x 450	560 x 520	150	1200
DGHTOD4/4337 KHA	430 x 370 x 100mm Double Tri Gully, Group 3	430 x 370	450 x 390	520 x 520	100	990
DGHTOD6/4337 KHA	430 x 370 x 150mm Double Tri Gully, Group 3	430 x 370	450 x 390	520 x 520	150	990
DGHTOD4/6045/ KH	600 x 450 x 100mm Double Tri Gully, Group 3	425 x 425	600 x 450	775 x 545	100	1740
DGHTOD6/6045/ KH	600 x 450 x 150mm Double Tri Gully, Group 3	425 x 425	600 x 450	775 x 545	150	1740
DGHTOD4/6060/ KH	600 x 600 x 100mm Double Tri Gully, Group 3	580 x 580	600 x 600	775 x 695	100	2060
DGHTOD6/6060/ KH	600 x 600 x 150mm Double Tri Gully, Group 3	580 x 580	600 x 600	775 x 695	150	2060
DGHTOD4/1045/KH	1000 x 450 x 100mm, Double Tri Gully, Group 3	980 x 425	1000 x 450	1175 x 545	100	2810
DGHTOD6/1045/KH	1000 x 450 x 150mm Double Tri Gully, Group 3	980 x 425	1000 x 450	1175 x 545	150	2810

Illustrated: DGHTOD4/1045/KH



Dimensions:

Diagram Key	
A x B	Overall Frame Size
C x D	Clear Area
F x G	Base opening
E	Frame Height



- For use in a Group 3 D400 class environment
- Fully compliant with BS EN 124
- Complies with Highways England specification HA 104/09
- Third party certified by BSI
- Three flanges - for placement against kerb edge
- Hinged product for ease of access
- Captive hinges reduce risk of theft and allow easy access for cleaning
- Enlarged frame corners help to dissipate the load
- Non rock - Three point suspension for non rock stability
- Waterway - Up to 2810cm²
- Reversible hinge - Allows correct configuration for traffic flow
- Manufactured from strong and highly durable ductile iron
- Mechanical lifting points

Highway® Group 4 Catch Pits

HIGHWAY®

Wrekin's Highway® Group 4 catch pits are designed and manufactured to exceed the enhanced requirements of national highway authorities' HA 104/09 specification.

The Highway® range of access covers and gully grates conforms to BS EN 124:2015 and also includes patented safety provisions and design features to ensure safe and robust performance.



Highway® Catch Pit Exploded Diagram:

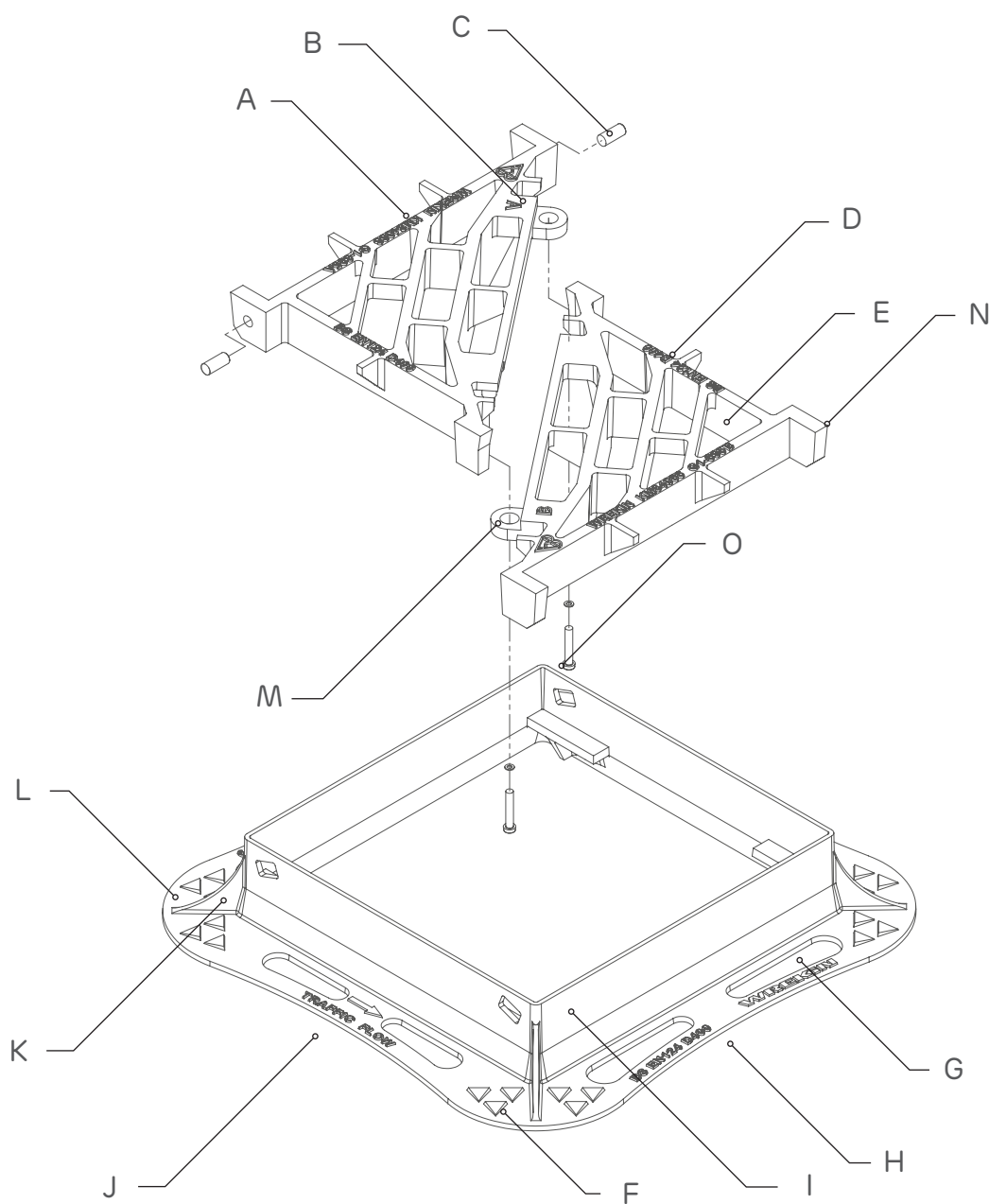
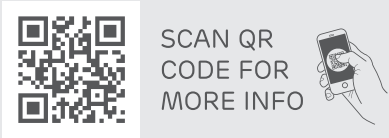


Diagram Key					
A	Optimised waterway area	G	Mortar engagement apertures	M	Articulation links
B	Branding	H	Lifting provision	N	Locking provision
C	Captive hinge pin	I	True frame depth	O	Link pins
D	Required markings	J	No protrusions		
E	High strength perimeter beams	K	Load transfer ribs		
F	Top flange grip	L	Enlarged load dispersal zone		



Available options:

- Locked
- Anti-slip Coating (60+ PSRV)



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4. Published November 2016 - V1.CE

Illustrated: DGHTOD4/6060/ KH4F



Highway®

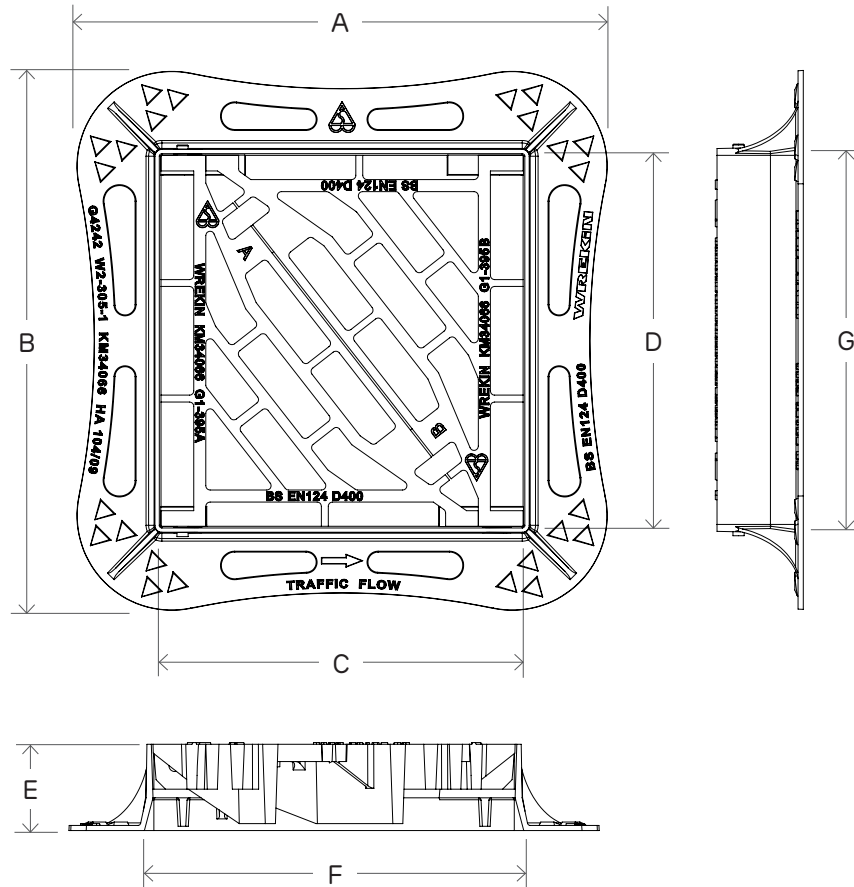
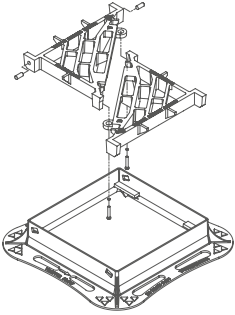
D400 & HA104/09 Group-4 Catch Pits - Four Flanged

WREKIN PRODUCTS STOCK CODE	ITEM DESCRIPTION	CLEAR AREA (C x Dmm)	BASE OPENING (F x Gmm)	OVERALL FRAME (A x B mm)	FRAME DEPTH (E mm)	WATERWAY (cm²)
DGHTOD4/4337/ KH4F	430 x 370 x 100mm Hinged Double Tri, Group 4	430 x 370	450 x 390	625 x 565	100	990
DGHTOD6/4337/ KH4F	430 x 370 x 150mm Hinged Double Tri, Group 4	430 x 370	450 x 390	625 x 565	150	990
DGHTOD4/4242/ KH4F	450 x 450 x 100mm Hinged Double Tri, Group 4	425 x 425	450 x 450	615 x 615	100	1200
DGHTOD6/4242/ KH4F	450 x 450 x 150mm Hinged Double Tri, Group 4	425 x 425	450 x 450	615 x 615	150	1200
DGHTOD4/6045/ KH4F*	600 x 450 x 100mm Double Tri Gully, Group 4	580 x 425	600 x 450	775 x 625	100	1740
DGHTOD6/6045/ KH4F*	600 x 450 x 150mm Double Tri Gully, Group 4	580 x 425	600 x 450	775 x 625	150	1740
DGHTOD4/6060/ KH4F	600 x 600 x 100mm Double Tri Catch Pit, Group 4	580 x 580	600 x 600	775 x 775	100	2060
DGHTOD6/6060/ KH4F	600 x 600 x 150mm Double Tri Catch Pit, Group 4	580 x 580	600 x 600	775 x 775	150	2060
DGHTOD4/1045/ KH4F*	1000 x 450 x 100mm Double Tri Gully, Group 4	980 x 425	1000 x 450	1175 x 625	100	2810
DGHTOD6/1045/ KH4F*	1000 x 450 x 150mm Double Tri Gully, Group 4	980 x 425	1000 x 450	1175 x 625	150	2810

* Call for more details

Dimensions:

Diagram Key	
A x B	Overall Frame Size
C x D	Clear Area
F x G	Base opening
E	Frame Height



- For use in a Group 4 D400 class environment
- Fully compliant with BS EN 124
- Complies with Highways England specification HA 104/09
- Third party certified by BSI
- Four flanges - for placement away from kerb edges
- Hinged product for ease of access
- Captive hinges reduce risk of theft and allow easy access for cleaning
- Enlarged frame corners help to dissipate the load
- Non rock - Three point suspension for non rock stability
- Waterway - Up to 4520cm²
- Manufactured from strong and highly durable ductile iron
- Mechanical lifting points

Highway® V Gully Grates

HIGHWAY®

Wrekin's Highway® Group 4 V gully gratings are designed and manufactured to exceed the enhanced requirements of national highway authorities' HA 104/09 specification.

The Highway® range of access covers and gully gratings conforms to BS EN 124:2015 and also includes patented safety provisions and design features to ensure safe and robust performance.



Highway® V Gully Grate Exploded Diagram:

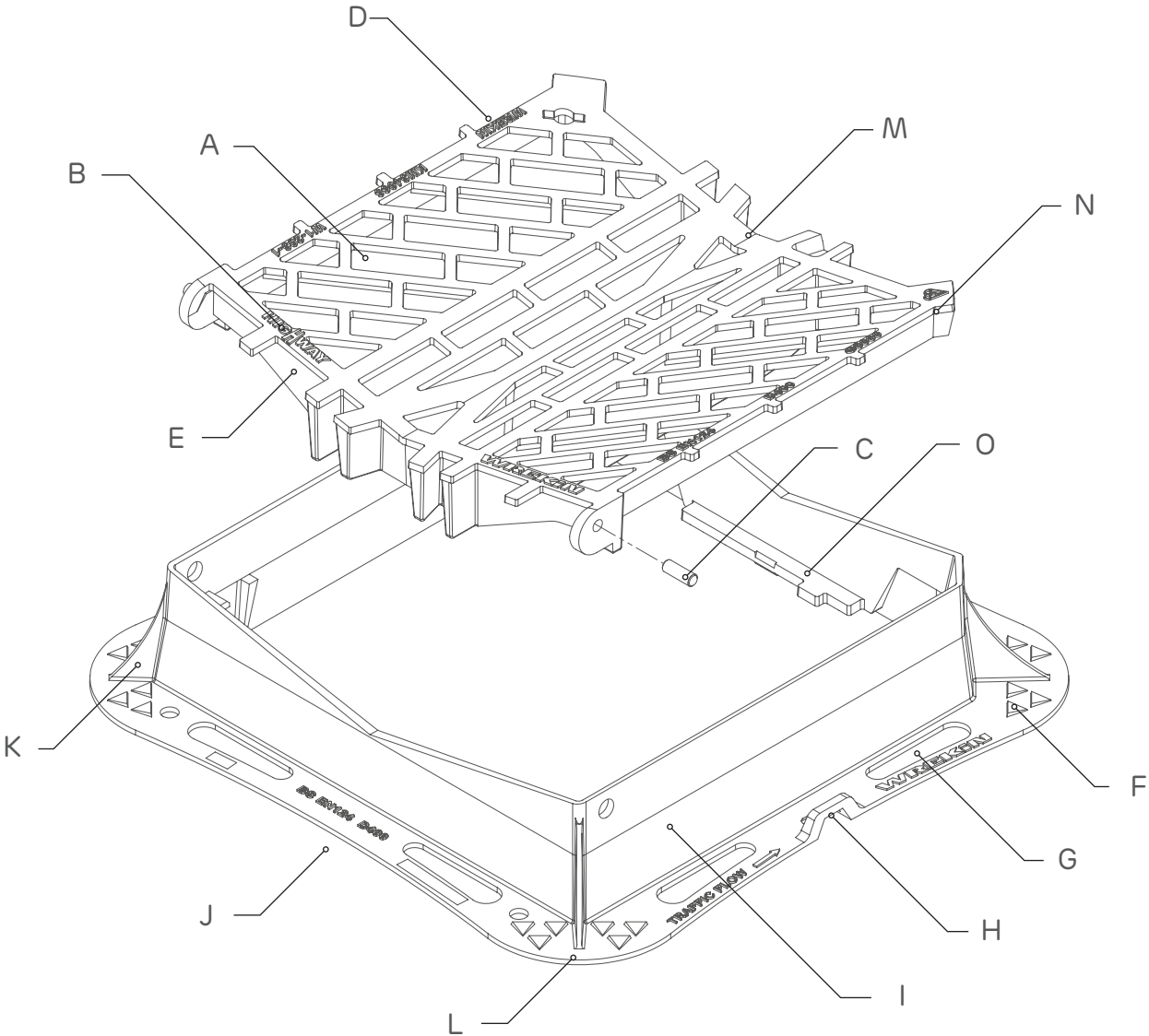
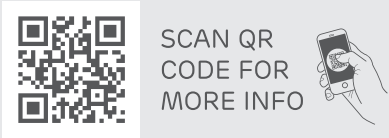


DIAGRAM KEY					
A	Optimised waterway area	G	Mortar engagement apertures	M	Central beam
B	Branding	H	Lifting provision	N	Locking provision
C	Captive hinge pin	I	True frame depth	O	Spring bar
D	Required markings	J	No protrusions		
E	High strength perimeter beams	K	Load transfer ribs		
F	Top flange grip	L	Enlarged load dispersal zone		



- Available options:
- Locked
 - Anti-slip Coating (60+ PSRV)



1. Wrekin Products Ltd is continually seeking to improve our products and therefore reserves the right to alter product specifications without prior notice.
2. It is the responsibility of all users to satisfy themselves the above data is current.
3. Installation details are available on request.
4. Published November 2016 - V1.CE

Illustrated: DGHV0D6/6060/KH



Highway®

D400 and HA104/09 V Gully Grate - Four Flanged

Wrekin's Highway V Gully is ideal for use in carriage surface water drainage channels with a 1:5 shaped profile. As a safety-critical product this design incorporates a spring lock, safety lifting keyway and captive anti-theft hinges. This product performs to HA104/09.

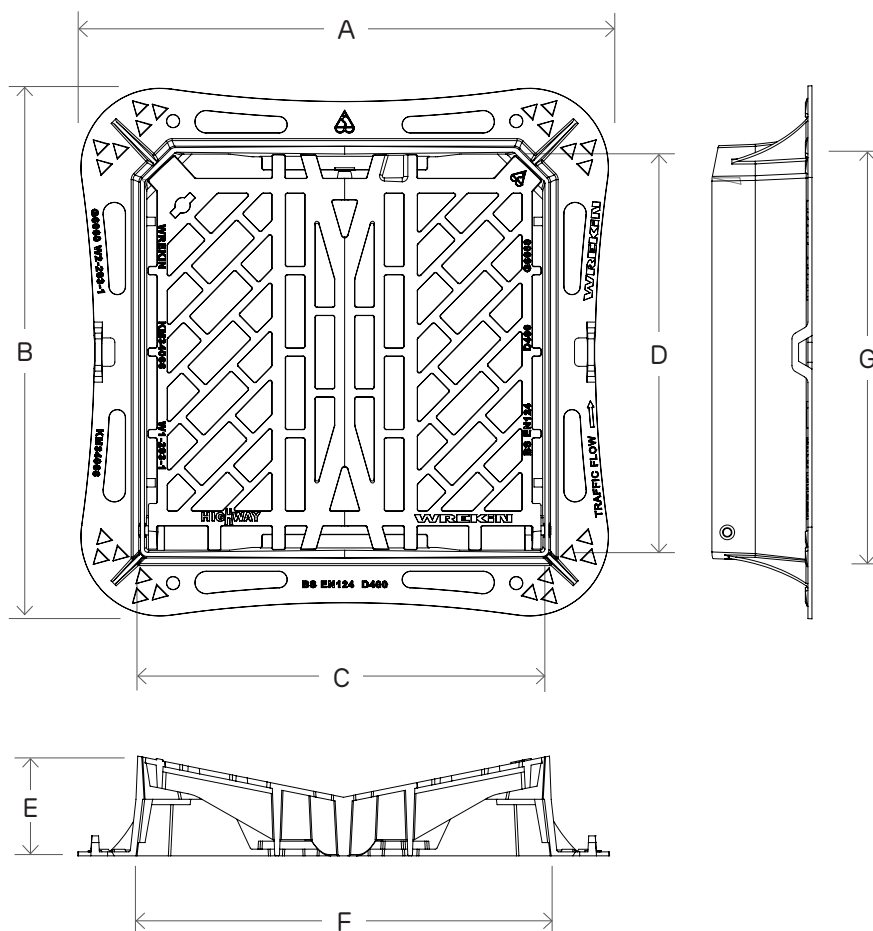
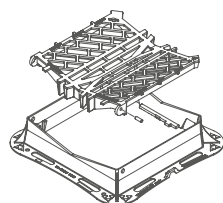
WREKIN PRODUCTS STOCK CODE	ITEM DESCRIPTION	CLEAR AREA SIZE (C x D mm)	BASE OPENING (F x G mm)	OVERALL FRAME (A x B mm)	FRAME DEPTH (mm)	WATERWAY (CM²)
DGHV0D6/6060/KH	600 x 600 x 150mm V Gully Grate	600 x 600	624 x 624	813 x 813	150	2200
DGHV0D6/6712/KH	675 x 1200 x 150mm V Gully Grate	675 x 1200	703 x 1228	878 x 1403	150	4520
DGHV0D8/1267/KH	1200 x 675 x 200	1200 x 675	1228 x 703	1403 x 878	200	4520

Illustrated: DGHV0D6/6712/KH



Dimensions:

Diagram Key	
A x B	Overall Frame Size
C x D	Clear Area
F x G	Base opening
E	Frame Height



- For use in a Group 4 D400 class environment
- Fully compliant with BS EN 124
- Complies with Highways England specification HA 104/09
- Third party certified by BSI
- Four flanges - for placement away from kerb edges
- Hinged product for ease of access
- Captive hinges reduce risk of theft and allow easy access for cleaning
- Waterway area - 2020cm²
- Enlarged frame corners help to dissipate the load
- Safety keyway - Ensures key's secure in keyway when lifting
- Manufactured from strong and highly durable ductile iron
- Mechanical lifting points

UniPak™ System

Fast curing polyester resin frame foundation system

Minimise the risk of manhole cover and gully grate bedding failure with UniPak™. UniPak™ brings together the ideal combination of bedding components to address all common causes of bedding failure.

Highway® manhole and gully frames have been designed to work best with the UniPak foundation system. The system includes engineered, factory-made polymer resin packing plates, polymer resin stepped wedges and polymer resin bedding mortar. The three have been designed to work together seamlessly, creating a coherent, mechanically-interlocked ironwork support structure.

Cured UniPak™ bedding behaves in a sympathetic and dependable manner. It harmonises with traffic forces being applied through the ironwork and remains stable in its attachment with each component, staying strong even when traffic accelerates or brakes over it.

Stepped wedge blocks can be used to securely support iron frames during installation as part of the UniPak™ system. Popular when a quick cure time is needed to align a new ironwork frame with the surrounding road surface, the wedges can be easily placed for initial frame adjustment. UniPak mortar may then be simply packed under and on the ironwork frame flange.

UniPak™ creates a strong, uniform, semi flexible foundation for manhole covers and/or gully grates from installation onwards.

The system comprises three components:



Fast curing, low-slump resin-based mortar, made to ensure an effective 1:1 ratio mix and instantly identifiable when in use by its unique colour



Multi-thickness, non-crack-inducing packing plates, with textured faces to ensure tight interlock with mortar, replacing unsuitable, ad-hoc packing materials.



Incrementally stepped wedge support blocks designed to be used as a set of 4. Each step is 5mm deep.



High Strength Polyester Resin Ironwork Foundation



UniPak™ and HA104/09

The unique combination of components found in UniPak™ were created in response to the findings of WRc Streetwork research report CP373 and to exceed the performance requirements described in HA104/09. It is the only system of conventional ironwork bedding components known to achieve this.




Up to 89% of ironwork failures have suffered foundation issues which may have contributed to manhole cover and gully grate bedding failure, and in 44% of cases problems with the foundation were the sole cause of failure. [\[Source WRc\]](#)

UNIPAK PACKING PLATES	SIZE (MM)	PRODUCT CODE
Packing plate 1A	760 x 100 x 15	PC/UNIPAK/151076
Packing plate 2B	760 x 150 x 15	PC/UNIPAK/151576
Packing plate 3C	760 x 100 x 25	PC/UNIPAK/151076
Packing plate 4A	760 x 150 x 25	PC/UNIPAK/151076
Packing plate 5B	760 x 100 x 45	PC/UNIPAK/151076
Packing plate 6C	760 x 150 x 45	PC/UNIPAK/151076

UNIPAK MORTAR	TUB PACKING (KG)	PRODUCT CODE
Mortar (standard)	6.5	YPCR/U6.5
Mortar (standard)	12.5	YPCR/U12.5
Mortar (standard)	25	YPCR/U25

UNIPAK™ SUPPORT WEDGES SIZE (MM)	PRODUCT CODE
120 x 50 x 75	PC/UNIWEDGE/755012

UniPak Mixing Guide

-  Remains workable for 15mins @ 20°C
-  Working & curing time is reduced by warmer temperature
-  Working & curing time is increased by colder temperature



Open container using the snap tab provided. Be sure not to leave any litter. Check the contents before starting to mix. UniPak has a shelf-life of 6 months, and should be transported sealed.

6.5kg	1x resin	1x powder
12.5kg	1x resin	1x powder
25kg	2x resin	2x powder



Carefully remove the lid and pour the resin element into the container. Use a screw driver to pierce the tin to allow a faster flow. If the pouring spout is damaged, use the screwdriver to prize it out.

Ensure all liquid is added.



Start mixing the resin with the paddle whilst another team member adds the powder slowly to the bucket. Do not add the powder too fast as this can lead to dust clouds and the powder collecting in the corners of bucket unmixed. UniPak emits a polyester odour which is not harmful but can be unpleasant.



Mix thoroughly to a consistent colour for 1-2 minutes with an electric powered paddle on slow speed setting (See step 5 for consistency) Ensure the paddle reaches the bottom of the tub where the dry powder has a tendency to collect unmixed.



Correctly mixed UniPak mortar should form a "snow ball" when compressed gently between hands. Pack the mortar where required using a gloved hand.

Don't forget to wash your hands after you have finished, before you do anything else.

STOP. HAMMER TIME! *When is it safe to traffic UniPak?*

UniPak™ polyester resin mortar is a fast curing system. We advise performing the 'Hammer Test' before adding suitable reinstatement material* Tap the exposed mortar lightly with a standard flat headed hammer. If the mortar shows an indent, further curing time is require. No indent means it is safe to traffic.

6 Please refer to latest HAUC Guidelines

Available options and accessories

Locking & High Security
 Flood and Odour Control
 Friction Anti Skid
 Badging
 Safety Grills
 Vented Covers



Locking & High Security



In order to provide controlled access to chamber or gully systems, all Highway® manhole covers and gully gratings can be supplied with factory-fitted screw fasteners.

These fasteners are simple, robust and resistant to common highway contaminants, and deter unauthorised access.

They are simple to operate using conventional allen key tooling.

The security can be increased by using Home Office approved, 6 lobe Torx pins.



Wrekin's Hugslock system is patented fully preventative access protection.

The Wrekin system prevents entry, allow appropriate access, provide notification of attack as well as environmental monitoring of everyday threats such as water and gas build-up.

The Hugslock covers can be controlled and monitored via mobile device or PC.

Our systems are accredited as secure by a number of separate authorities:

- BRE global testing (LPCB security rating 3)
- LPCB
- Redbook live
- SCIDA
- MoD JSPs
- SBD Secured By Design
- ACPO Association of Chief Police Officers

Monitoring available from Wrekin

Sensor	Icon	Function of Sensor
Motion		Detects unauthorised entities attempting to enter the chamber
Water		Leak detection, water levels, water quality, potential flooding analysis
Gas		Detects any harmful gas build ups and reports in real time
Seismic		Scientific purposes, insurance reasons
Remote locking		Allows user to lock the covers remotely from any device
Infrared CCTV		Enables remote checking of chamber in any lighting conditions

Hugslock is available on a full range of iron and fabricated steel products from Wrekin.

Flood and Odour Control Plate



The Wrekin Flood and Odour control plate is designed to resist chamber odours, flood water ingress, and intermittent chamber pressures of up to 0.5 bar.

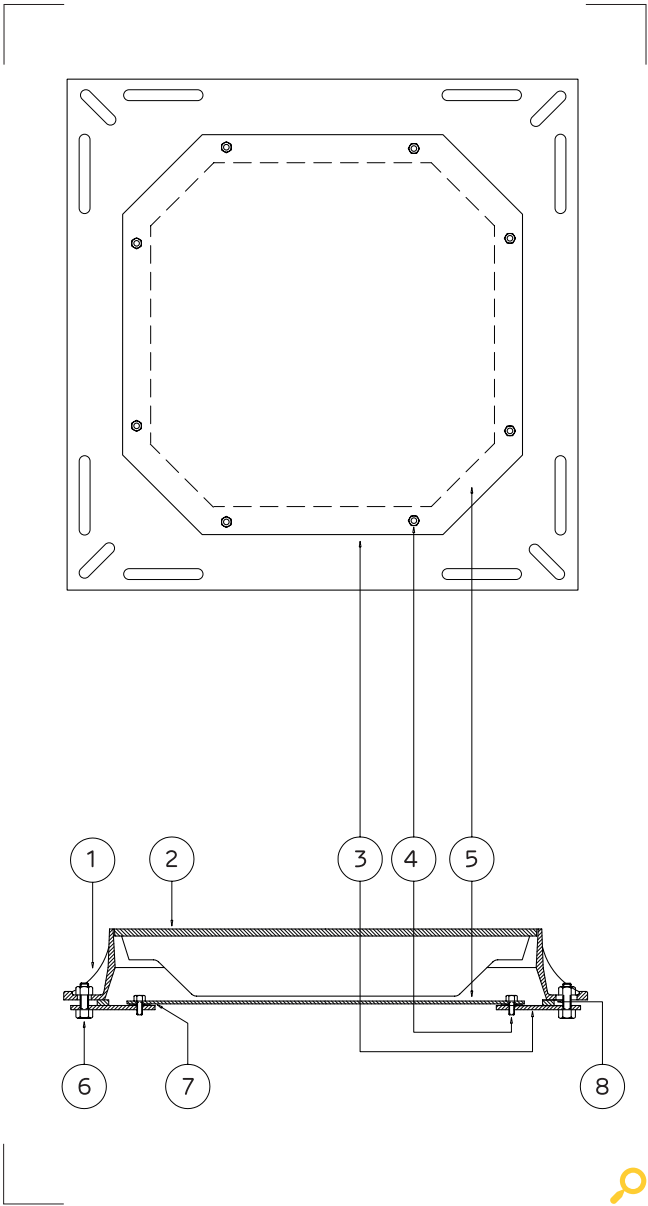
The plate and frame are supplied bolted to the underside of the manhole cover frames and make the seal using an elastomeric gasket.

Features:

- Resists water and gaseous ingress and egress at normal atmospheric pressures
- Zinc-protected mild steel sealing plate and sub-frame
- Rated to 0.5 bar of surge pressure
- Fitted with a closed cell elastomeric seal
- Manufactured and fitted under an ISO 9001:2000 system
- Removable lid fixed with stainless steel bolts
- Kitemark or other third party certification is not affected

Clear openings are reduced by fitment of this universal sealing plate. Frames must be adequately secured to the chamber. For sealed applications where regular inspection is required we recommend using our Unite+ LowLeak™.

For supply with new Wrekin ductile iron covers and frames only.



No.	Description
1	Ductile iron frame
2	Ductile iron cover
3	Mild steel sub frame
4	Multiple locking screws in plate
5	Mild steel sealing plate
6	Subframe bolted to ductile frame
7	Elastomeric sealing gasket strip
8	Frame flange seal

Friction Anti Skid

Wrekin manhole covers are all supplied with an engineered inherently skid-resistant chequer pattern as standard.

Where additional grip is required, Wrekin provide a factory-applied high friction, slip resistant thermoplastic coating which exceeds 60 PSRV.

Friction anti-skid is a the perfect solution for increasing the skid resistance of all highway ironwork and is available in 6 colours.

Available Colours.



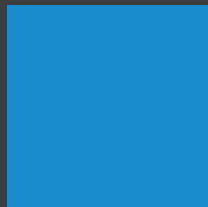
Highway Black



Marking White



Traffic Yellow



Cycle Blue



Pillar Box Red



Safe Green



Badging Options

Special badging.

Depending on purchase quantities a large area of the cover can be dedicated to customer badging.

Our sales team will be happy to discuss your requirements.



Application Badging.

The most common badging requirements are:

FW - foul water
SW - surface water

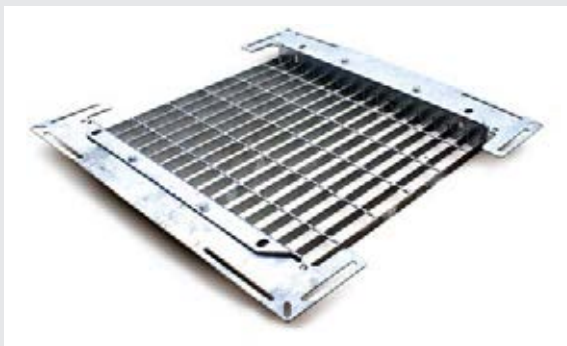
Other common options include:

GAS, CATV, FH, AV, SV, WO, WATER,
TRAFFIC SIGNALS, STREET LIGHTING,
CCTV, MOTORWAY COMMUNICATIONS,
VALVE, TFL

More options available on request.



Safety Grill



Wrekin's safety grills are a robust factory-fitted accessory designed for standard access cover and frames. Offering a long life, they provide a high level of operator and access cover safety while allowing in-situ chamber inspection or easy removal for chamber access. Lightweight versions are also available. Hot dip galvanised to BS EN ISO 1461:2009

WREKIN PRODUCTS STOCK CODE	ITEM	CLEAR OPENING (mm)	SAFETY GRILL (C x D mm)	DEPTH (mm)	SAFETY GRILL (A x B mm)
C2F/SGRILLE/6060L	600mm Safety Grill	500	500 x 600	65	700 x 700
C2F/SGRILLE/6767L	675mm Safety Grill	575	575 x 675	65	775 x 775

For supply with new Wrekin ductile iron covers and frames only.



Vented covers

Venting requirements

Where venting is required, as standard Wrekin provide 21mm diameter holes.

Different configurations are available by request.



Lifting Keys



Multi Cover Lifting Key

WREKIN PRODUCT CODE	DESIGN	USE	LENGTH (mm)
KEYS/L	Cross	Light / Heavy duty	128



Heavy Duty Lifting Key

WREKIN PRODUCT CODE	DESIGN	USE	LENGTH (mm)
KEYS/HEAVY	Loop	Heavy Duty	171



Heavy Duty Long Lifting Key

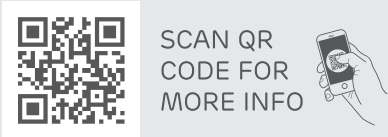
WREKIN PRODUCT CODE	DESIGN	USE	LENGTH (mm)
KEYS/LONG	Loop	Heavy Duty	566



Unite: the most durable cover available



- Available options:
- Locked
 - Badged (e.g. 'SW', 'FW' etc.)
 - Ventilation Holes
 - Sealing Plate
 - Safety Grill
 - Anti-slip Coating (60+ PSRV)



1. Wrekin Products Ltd is continually seeking to improve our products and therefore reserves the right to alter product specifications without prior notice.
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Unite

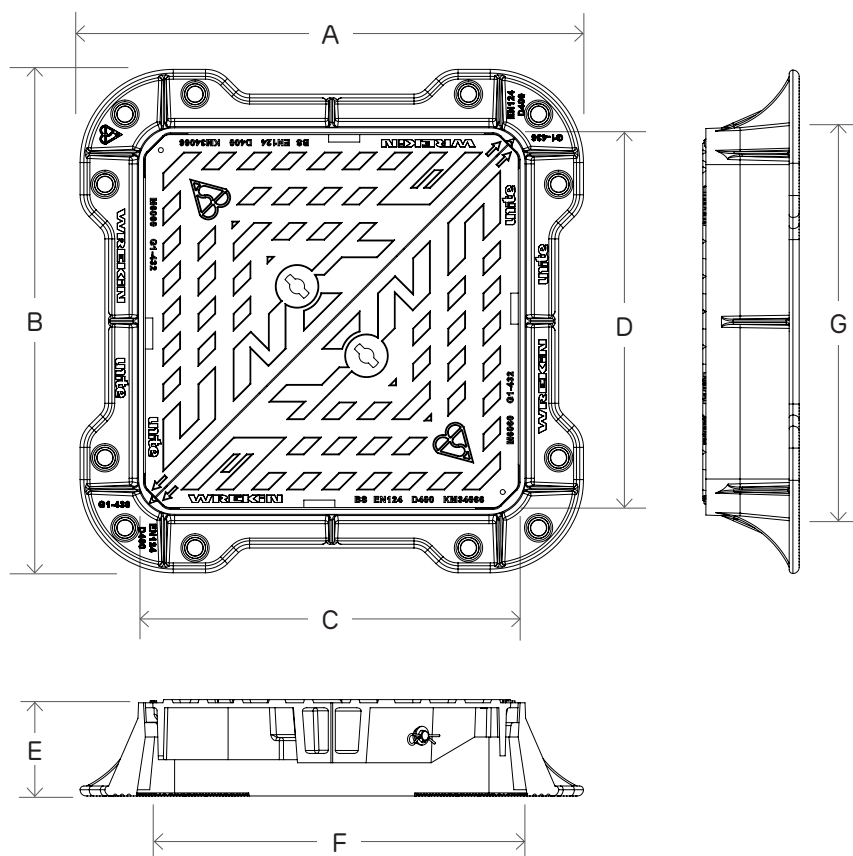
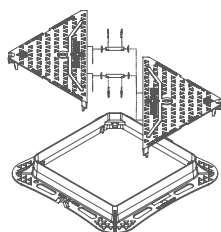
Ductile iron D400 and HA104/09 access covers

The best value D400 access cover range available in the market. Full of patented design features which combine to give Unite exceptional durability. Unite has the lowest whole life cost of any D400 access cover. It exceeds both BS EN 124:2015 and HA104/09 requirements.

- For use in a Group 4 D400 class environment
- Third party certified by BSI
- Complies with Highways England specification HA 104/09
- Cover support geometry reduces movement relative to the frame
- Under frame grip - Engages with bedding mortar reducing lateral shift
- Enlarged frame corners help to dissipate the load
- Antiflex cover - reduces cover frame wear
- Non rock - Three point suspension for non rock stability
- Safety keyway - Ensures key's secure in keyway when lifting
- Manufactured from strong and highly durable ductile iron

Dimensions:

Diagram Key	
A x B	Overall Frame Size
C x D	Clear Area
F x G	Base opening
E	Frame Height



WREKIN PRODUCTS CODE	CLEAR OPENING SIZE (C x D mm)	FRAME DEPTH (mm)	OVER FRAME SIZE (A x B mm)
DMTOD4/6060/KU	600 x 600	100	810 x 810
DMTOD6/6060/KU	600 x 600	150	810 x 810
DMTOD4/6767/KU	675 x 675	100	890 x 890
DMTOD6/6767/KU	675 x 675	150	890 x 890
DMTOD6/1267/KU	1220 x 675	150	1480 x 920
DMTOD6/1867/KU	1830 x 675	150	2075 x 920

Geosynthetic Products

Wrekin are specialists in the supply, design and specification of a vast range of geosynthetic products to the highways industry. Our innovative approach to manufacture, project design and service has established Wrekin as a major supplier in the UK, offering prompt deliveries from our stocking depots nationwide.

We are continuously developing and expanding our product ranges, providing cost effective solutions for a vast range of applications.

- Asphalt reinforcement
- Ground stabilisation
- Reinforcement
- Erosion control
- Drainage
- Environmental protection
- Grass protection
- Weed suppression
- Tree Root Protection

All Wrekin geosynthetics are manufactured using state of the art equipment and are tested in independently accredited, fully equipped geosynthetics laboratories in accordance with the latest European and international standards.

The Construction Products Regulations make it mandatory that "Geotextiles, geomembranes and other related products" are CE marked. All Wrekin products comply with this requirement.



Cellular Confinement Systems



Wrekin's 3 dimensional cellular confinement systems reinforce pavement bases, and/or sub grades whilst increasing the modulus of the infill. This enables the use of lower grade infill in the structural pavement and reduces the layer thickness to save road construction costs.

The unique hoop strength and perforated interconnecting cells allows engineers to design steep slopes safely reducing land take and reducing whole life costs of the project.

E'Grid Geogrid Reinforcement



E'GRID biaxial geogrids from Wrekin are a range of premium quality punched and drawn polypropylene geogrids that optimise the rib height and open aperture area to maximise stone penetration and interlock with the grid. They are comparable to other market leading products and offer a design life in excess of 100 years. They can solve pavement problems by giving omni-axial reinforcement to granular sub-bases, piling platforms, capping layers and railway ballasts in areas of weak or variable soils. Uniaxial geogrids for slope stabilisation are also available.

Trinter Erosion Control Geomat



Wrekin Products' Trinter is a volumetric geomat made from high density Polyethylene and is designed to control erosion.

Trinter allows good germination and facilitates the growth of vegetation, encouraging root networks to interlace with the mesh, stabilising the upper layer and allowing a deeper root network to develop.

Easy to install, and highly resistant to degradation, Trinter can be used on all types of sloping ground.

Asphalt Grid Asphalt Reinforcement Geogrid



Wrekin's Asphalt Reinforcement Geocomposite is a highly effective solution, helping asset owners maintain their road networks in a serviceable condition. It is easily installed into a bitumen tack coat with out requirement for additional fixings. The non woven fabric bonds to the road surface and forms a seal preventing water and oxygen from penetrating and damaging the road structure.

High tenacity glass fibre filaments reinforce the road, significantly reducing the formation of reflective cracks thereby extending the life of the carriageway.

Notes:

[illegible]

Frequently used terminology

Anti-Slip Keyways

Patented keyways design by Wrekin to ensure the key is secure in keyway, preventing slippage.

Captive hinge

Integral hinge feature which allows easy access but resists total unauthorised removal of cover or gully grating.

Chequer pattern

Integrally cast raised pattern on the top surface of manhole covers.

Clear opening

EN 124 defines the clear opening as the largest circle you can enclose within the frame. However it is often used to refer to the opening size of the chamber opening.

Double triangular

Covers or gratings formed from two triangular units giving stable seating under load and non-rock performance.

Indexed Covers

Ensures covers can only be installed in one orientation.

Kerb hinged

Hinge located adjacent to the kerb.

Keyways (closed)

Blind lifting pockets in covers for lifting keys which prevent ingress of coarse debris.

Keyways (open)

Lifting keyway holes in covers for lifting keys.

Load Dispersal Zones

Design of frame and cover features that reduce the strain in the foundation bedding material, enhancing ironwork performance and longevity.

Loosely coupled

The two half covers/gratings of double triangular units are connected together loosely by pins and clips. This helps prevent covers/gratings being dropped in the shaft during lifting and, being a loose connection, still allows the two half covers/gratings to operate independently and retain their non-rock facility.

Non-rock

Cover/grating and frame design which gives quiet stable seating i.e. double triangular.

Prising slot

Slot in cover edge or occasionally on inside of frame that allows the use of a suitable prising bar to loosen covers before removal.

Safety grid

A fabricated galvanised mild steel grid, which normally drop-fits onto the frame below the cover to provide a safe working environment and to prevent covers and other objects being dropped into the shaft.

Set

Two triangular covers together are often referred to as a set.

Seal plate

Completely sealed removable plate installed under the manhole cover as a protective barrier against sewer gasses and condensates.

Solid top

Continuous top cover. Not a recessed cover or a grating.

Seating

Bearing/contact area between cover and frame.

Single-piece

Cover/grating comprising one piece.

Ventilated cover

Openings within cover that allow the possibility of free air circulation within the shaft and reduce pressure build-up or the concentration of explosive or noxious gases.

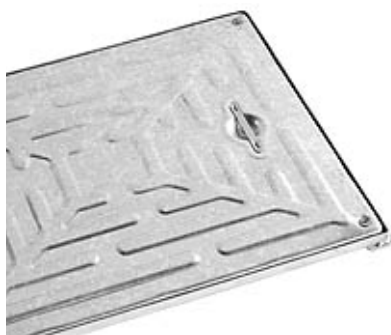
Waterway area

Free area of grating which allows the passage of water (ie. total area of slots).

Other products from Wrekin:



Wide Ironwork Range



Pressed Steel Covers



Fabricated Steel Access Covers



Asphalt Reinforcement Grids



Grass / Gravel Paving Systems



Woven & Non Woven Geotextiles



Geomembranes



Gabion Baskets



Geocomposite Drainage

Intelligent products for civil engineering



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