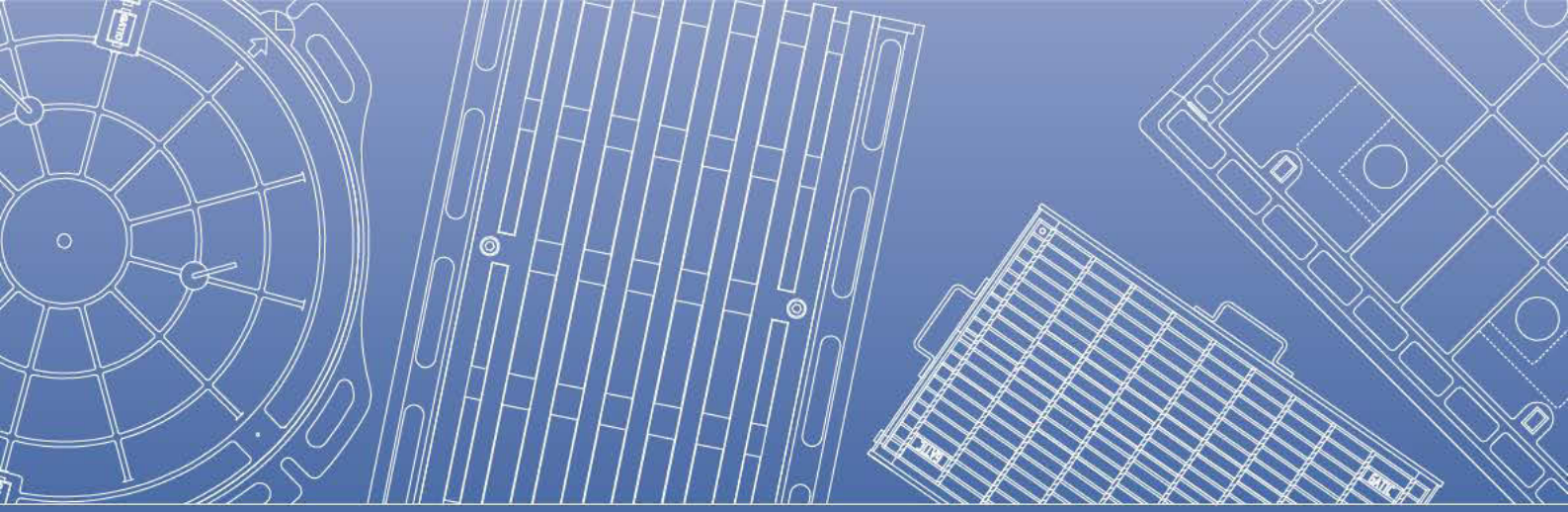
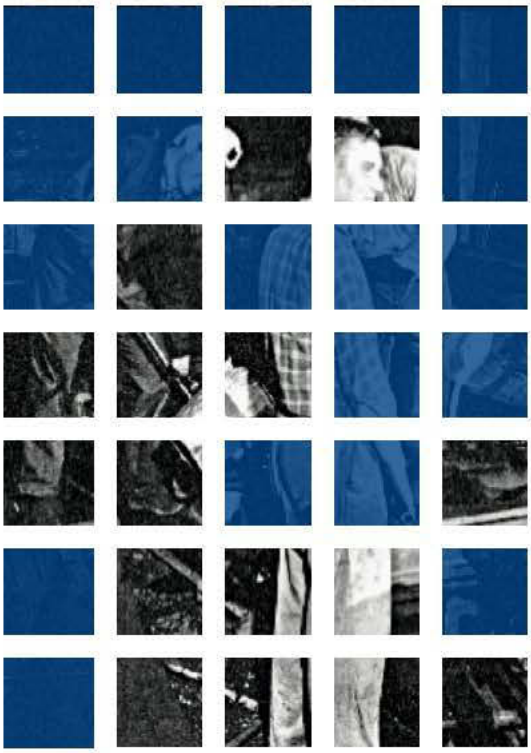


PRODUCT CATALOGUE

ACCESS COVERS GRATES & ACCESSORIES

GATIC®



Disclaimer

All information contained in this brochure should serve as a guide only and is subject to change without notice. Gatic does not invite any person to act or rely upon such information and liability for such information is excluded. In particular, as new technology is developed rapidly, product specifications, designs and components may change and GATIC Pty. Ltd. reserves the right in its discretion to make such changes as it sees fit.

The information contained in this catalogue does not form part of the terms and conditions of sale or constitute the description of any goods to be supplied by GATIC Pty. Ltd. or its distributors. Before purchasing a good, customers should source current product information from their distributor and seek expert advice on their particular intended use and application for the product.

70 Years of service & Innovation

GATIC® has a long and proud history of manufacturing in Australia, producing products that are the benchmark in its industry.

GATIC has been specialising in the manufacture and marketing of access covers and gratings since 1937. With over 50 years of foundry experience and large manufacturing and distribution network, GATIC is well placed at the forefront of the industry for product quality, innovation, technical support and customer service.

GATIC 70 years 1936 - 2006

GATIC® - *The most specified product in Australia*

GATIC
- Engineered excellence
- Quality and reliability
- Innovative design
- Class rated

A Wide Range of Products

GATIC's extensive range of access covers and gratings are designed and manufactured to meet the highest standards set by the civil and construction industry world wide.

The Gatic product range comprises:

- Circular access covers and frames
- Square and rectangular access covers and frames
- 2 - part, 3 - part and multi-part covers and frames
- Cast Iron, Galvanized Mild Steel (GMS) and Stainless Steel grates and frames
- Brass and Stainless Steel edged covers and frames
- Concrete encased covers and frames
- Roof and floor drains
- Tree grates
- Lifting keys and accessories

GATIC®

www.gatic.com.au

More information about GATIC's range of products can be found in our extensive on-line catalogue on our website www.gatic.com.au

GATIC's complete range of metal Access Covers, Road Grates and Frames are designed and tested in accordance with the Australian Standard AS3996:2006 and the European standard EN124:1994. The following table provides an overview of loading classes, its typical use and loading capacity. Appropriate class for a cover or grate depends upon the place of installation. Contact GATIC sales office for further information regarding selection of the appropriate class rating.

AS3996 : 2006 - Australian Standard Load Classifications

The Australian Standard, AS3996:2006 is GATIC's nominated standard for projects/applications within Australia. Type testing under AS3996:2006 requires the Access Covers to meet the **Ultimate Limit State Design Load (kN)** without exceeding the **Permanent Set and Deflection Limits.** *Refer to AS3996:2006 subclause 4.2.1. for further details.*

	CLASS RATING	TYPICAL USE	NOMINAL WHEEL LOAD (kg)		SERVICEABILITY DESIGN LOAD (kN)		ULTIMATE LIMIT STATE DESIGN LOAD (kN)	
			AS3996	WSAA	AS3996	WSAA	AS3996	WSAA
	A	Footways and areas accessible only to predestrians and pedal cyclists.	330	330	6.7	6.7	10	10
	B	Footways that may be mounted by a vehicle or livestock, and light tracker paths	2670	2670	53	54	80	82
	C	Malls and pedestrians areas open to slow moving commercial vehicles	5000	5000	100	100	150	150
	D	Carriageways of roads and areas open to commercial vehicles	8000	7000	140	160	210	240
	E	General docks and aircraft pavements	13700	13700	267	280	400	420
	F	Docks and aircraft pavements subjects to high wheel loads	20000	20000	400	410	600	615
	G	Docks and aircraft pavements subject to very high wheel loads	30000	30000	600	600	900	900

NOTE: The above descriptions of classes of units reference to "wheel" should also be taken to include "dual wheels".
Norminal wheel loads are a guide only. Consideration should be be given to the type, size and pneumatic pressure of the load in application.
A force of 1 kN is approximately equal to the weight of 100 kg.

EN124 : 1994 - European Standard Load Classification

The European Standard, EN124:1994 is GATIC's nominated standard for International projects/applications outside of Australia. Type testing under EN124:1994 requires the Access Covers to meet the Minimum Design Load (kN) without exceeding the Permissible Permanent Set values. Refer to EN124:1994 subclause 8.3. for further details.

	CLASS RATING	TYPICAL USE	NORMINAL WHEEL LOAD (kg)	SERVICIBILITY DESIGN LOAD (kN)	ULTIMATE LIMIT STATE DESIGN LOAD (kN)
	A	Footways and areas accessible only to predestrians and pedal cyclists.	330	10	15
	B	Footways that may be mounted by a vehicle or livestock, and light tracker paths	2670	83	125
	C	Malls and pedestrians areas open to slow moving commercial vehicles	5000	167	250
	D	Carriageways of roads and areas open to commercial vehicles	8000	267	400
	E	General docks and aircraft pavements	20000	400	600
	F	Docks and aircraft pavements subjects to high wheel loads	30000	600	900

NOTE: A force of 1 kN is approximately equal to the weight of 100kg.

LOAD CLASS SPECIFICATION

— CLASS RATING & DESIGN LOAD *210kN*

— VISUAL STANDARD REFERENCE

— CLASS RATING & DESIGN LOAD *400kN*

— VISUAL STANDARD REFERENCE *EN124 : 1994*

Commitment to Quality

GATIC Pty. Ltd. is committed to operate under a strict International Quality Managment System in accordance with ISO 9001:2008. Its objective is to satisfy and exceed our customers requirments and expectations in both quality products and services. Rigorous testing and quality control throughout the production process are audited and continuously improved to ensure that GATIC's products complies with Australian Standard AS3996:2006 and European Standard EN124:1994

To ensure consistant quality and performance, all GATIC products are inspected as follows proir to delivery.

- Dimensional tolerance check
- Material compositions
- Batch traceability data
- Load testing (in accordance with AS3996 or EN124)
- Keyhole gauge fit
- Machining
- Anti-rocking
- Painting surfaces
- General appearance
- Packaging

NATA
WORLD RECOGNISED ACCREDITATION

Testing Laboratory

GATIC's Mechanical Testing laboratory is recognised and accredited by the National Association Testing Authorities, Australia (NATA Laboratory Accreditation No. 14262). Load tests are carried out on our 1200kN capacity test rig as part of GATIC's Quality Assurance program in accordance with Australian Standard AS3996:2006 and European Standard EN124:1994. Test reports are available on request.

GATIC also undertakes the following tests both in-house and through independant institutes:

- Bicycle Tyre Penetration Resistance Test
- Hydraulic Flow Rate Test
- Gas-tightness Test
- Water-tightness Test

A


B


C


D

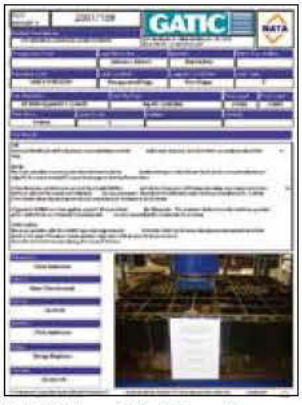
A: NATA certified laboratory with 1200kN rig shown.
B: GATIC Cover and Frame units under Load Testing.
C: Hydraulic Flow Rate Test of GATIC Smart Grate.
D: Bicycle Tyre Penetration Resistance Test.

Testing Procedure

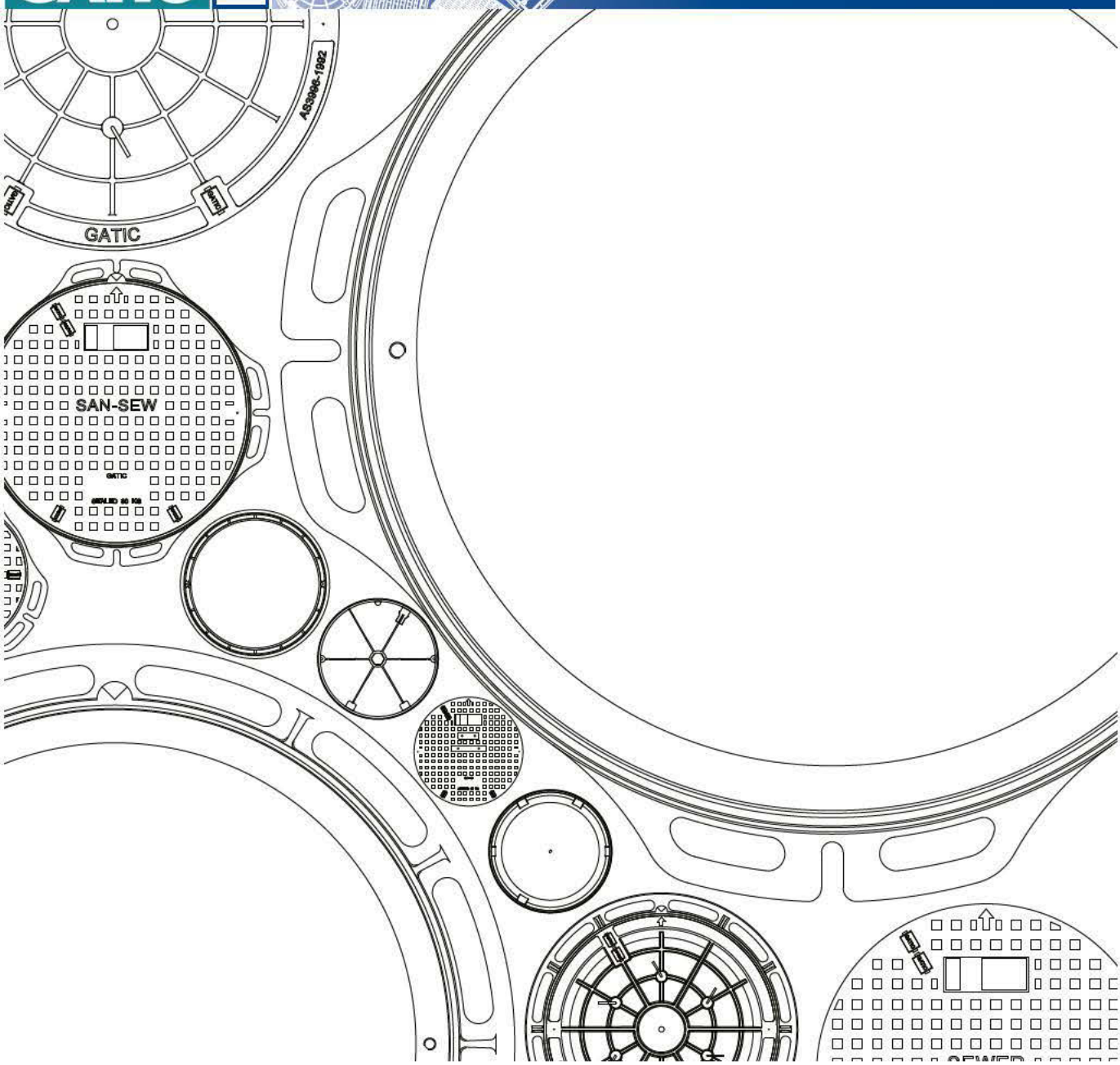
AS3996:2006

Load testing under Australian Standard AS3996 involves *Type Testing* of a unit to ensure the product acheives its Load Classification and Ultimate Limit State Design Load (kN).
Testing involves:

- Five repetitions of the serviceability design load is applied to the unit in accordance with AS3996:2006 subclause 4.2.1.1, measurement of Ultimate Limit State Design Load (kN). Set must not exceed the Permanent Set and Deflection Limits (refer to Table 4.2 in AS3996:2006 sublause 4.2.1.2).
- Followed immediately by one application of the ultimate limit state design load for a minimum of 30 seconds. The unit must sustain the above tests without visible cracking, collapse or other forms of structural failure.



GATIC Load Test Report


AS3996-1992
GATIC
SAN-SEW
SEWER

APPLICATIONS

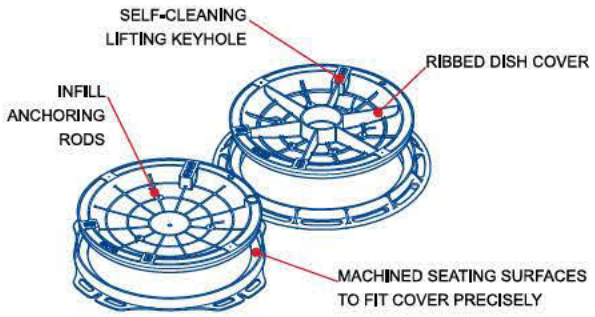
Circular cover units are intended primarily for use on circular pits where the use of a circular cover simplifies forming the pit top.

A range of units are available with prefilled covers and frames encased on concrete surrounds; these units are used on pits made from precast concrete pipes, or where on-site filling or pit rebate forming presents difficulties. The concrete surrounds of encased frames can also be modified for use over square or rectangular openings.

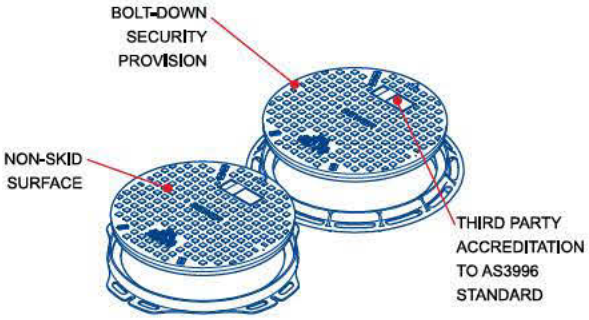
A circular cover, when placed on edge, cannot pass through its frame opening and accidentally drop inside the pit. This eliminates the danger of dropping the cover down the hole when servicing. This makes circular covers invaluable for use on single openings over valves, machinery or deep pits where a dropped cover could cause damage.

The design of GATIC circular covers utilises metal more effectively than can be achieved with the design of a square cover.

STANDARD CIRCULAR COVER UNIT FEATURES



300C - Circular Concrete Unfilled Unit



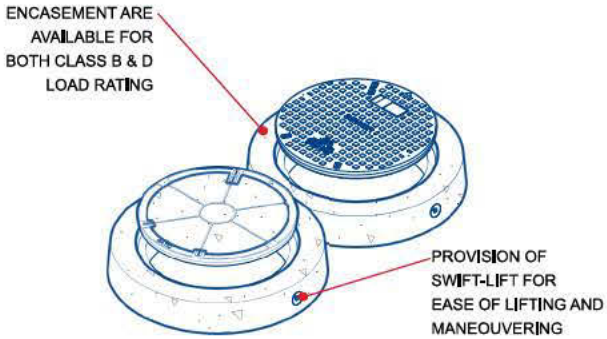
300S - Circular Solid Top Unit

The range of one-part circular units are available in Class B, D and E ratings in accordance with Australian Standard AS3996:2006 and with the following distinctive features:

- Covers (Infilled): ribbed, dished casting design.
- Covers (Solid Top): Non skid pattern top surface.
- Frames: Three T-bar sections for bolted and leaded joints.

Advantages of Circular Design:

- Covers cannot accidentally drop through frame openings.
- Compared with square units, circular units require less metal for the same strength and are, therefore, lighter.
- Modular cover and frame design allows full interchangeability between various covers within the same class rating.



310C - Concrete Encasement Unit

PRODUCT CODE SPECIFICATION

300S6D

CLASS RATING *D 210kN + AS3996*

C.O. DIAMETER *Ø610mm*

PRODUCT TYPE *300S - CAST IRON CIRCULAR SOLID TOP COVER & FRAME*
300C - CAST IRON CIRCULAR UNFILLED COVER & FRAME
310C - CAST IRON CIRCULAR CONCRETE ENCASED COVER & FRAME

MODIFICATION OPTIONS

Solid Top, Prefilled and Encased Units
A range of units are available to suit a variety of pit opening shapes and sizes, as tabulated in this section of the catalogue. Contact your nearest GATIC office for details.

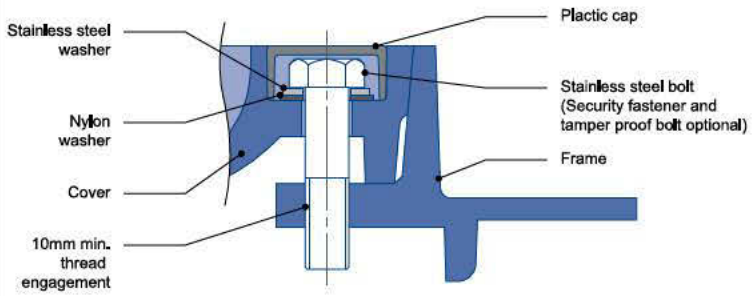
Other Modifications
Units can be modified to incorporate:

- Bolt-down Bolts and Locks for security.
- Insert Inspection Covers and Vents.
- Special Paintwork and Finishes.
- Concrete Encasement.
- Precast Chamber
- Riser Ring
- Rubber seal

SECURITY BOLT-DOWN

- Security bolt-down are designed to withstand in-service loading applicable to the location of the installation
- Non corrosive fasteners
- Bolt provision can be stainless steel, Barri bolt or tamper proof fasteners
- Supplied removable plastic cap to prevent the ingress of foreign materials
- minimum of 10mm thread engagement provides positive thread locking

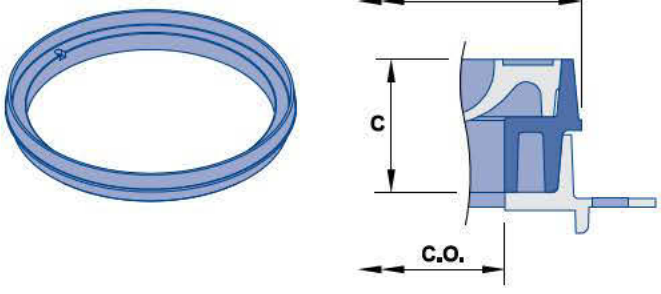
300C6B2SB
Product code
Bolt-down option



CIRCULAR UNIT ACCESSORIES

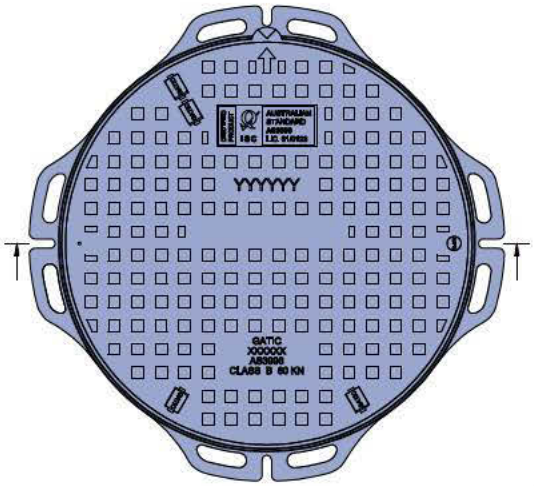
300R - CIRCULAR RISER RINGS

- Allows retrospective seating height adjustments of 50mm, 75mm and 100mm
- Improved sealing properties over precast riser rings
- Unobstructive impact on the integrity of the pit whilst retrofitting
- Cellular riser ring design provides high impact strength
- Ring accomodates both Class B and D rating covers

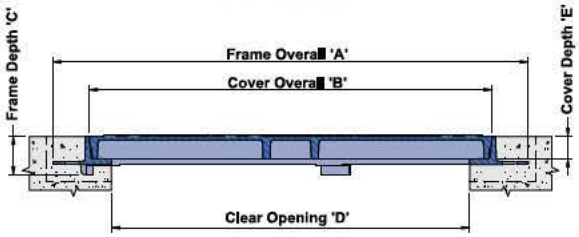


NOTE: The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office. GATIC reserve rights to change product specifications shown without prior notice.

300S: Cover Circular Solid Top

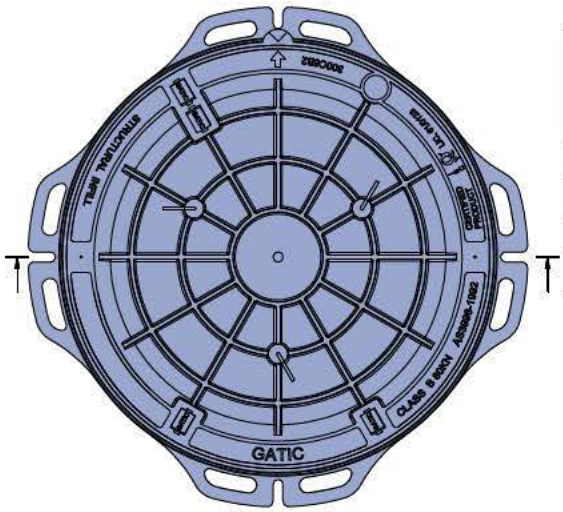


Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)				BADGING
	D		A	B	C	E	
GM300S6B	610	B	810	686	65	38	
GM300S6B2	610	B	810	686	65	38	SEWER
GM300S6B3	610	B	810	686	65	38	STORM WATER
GM300S6B4	610	B	810	686	65	38	SAN-SEW
GM300S6D	610	D	810	686	86	50	
GM300S6D2	611	D	810	686	86	50	SEWER
GM300S6D3	612	D	810	686	86	50	STORM WATER
GM300S6D4	613	D	810	686	86	50	SAN-SEW

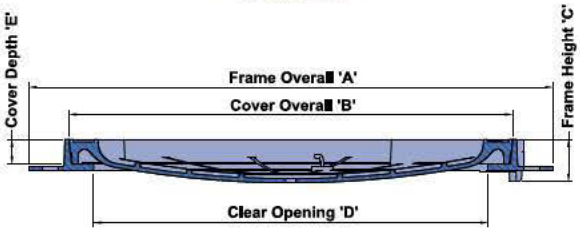


300S SECTION

300C: Cover Circular Concrete Infilled

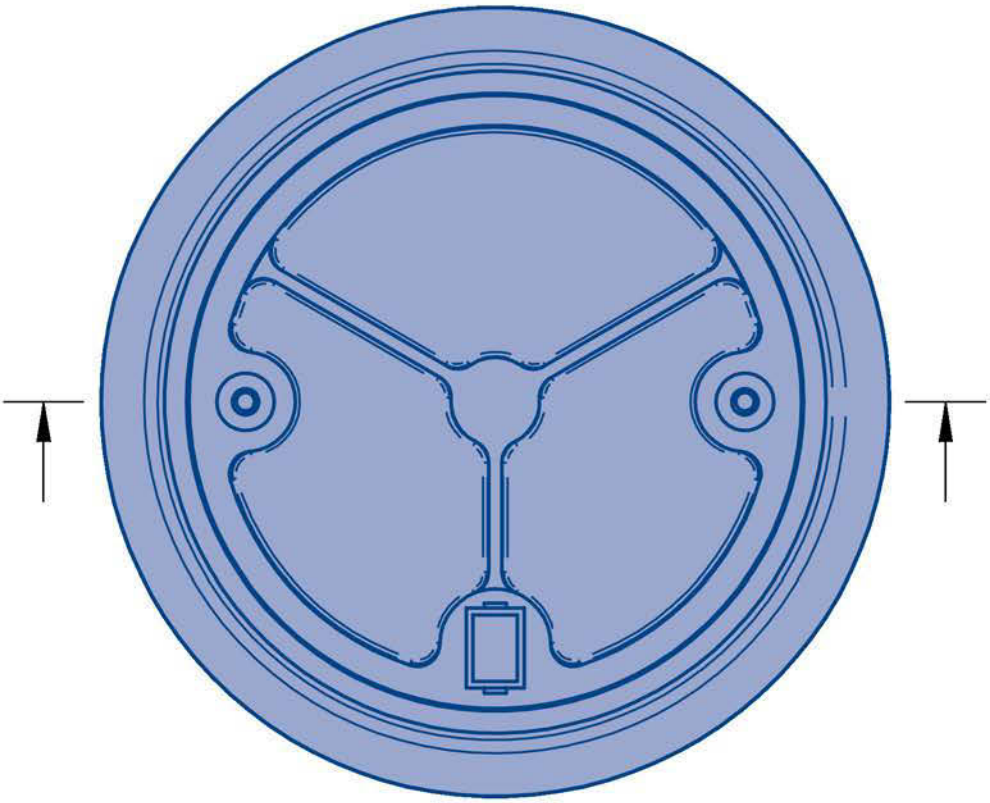


Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)				BADGING
	D		A	B	C	E	
GM300CB2	610	B	810	686	65	38	SEWER
GM300CD2	610	D	810	686	102	57	SEWER
GM300C6B2N	610	B	810	686	65	38	SEWER
GM300C6D2N	610	D	810	686	94	50	SEWER

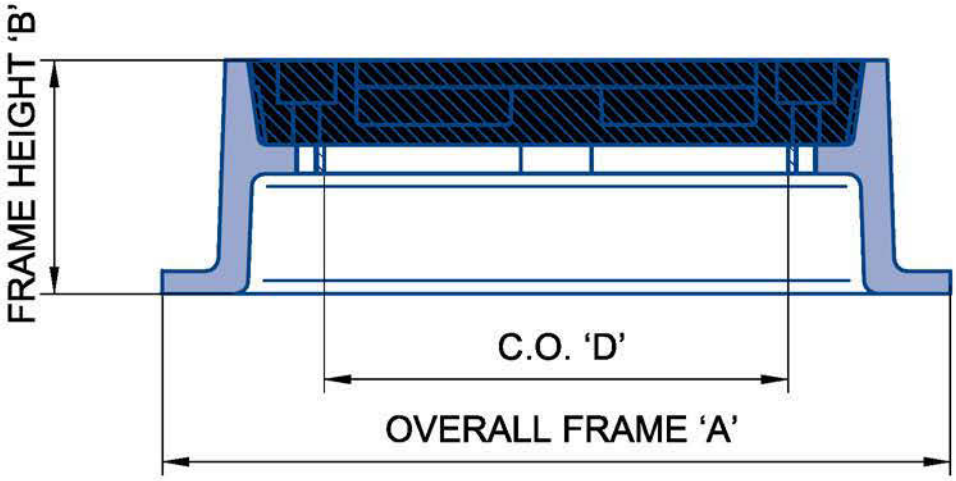


300C SECTION

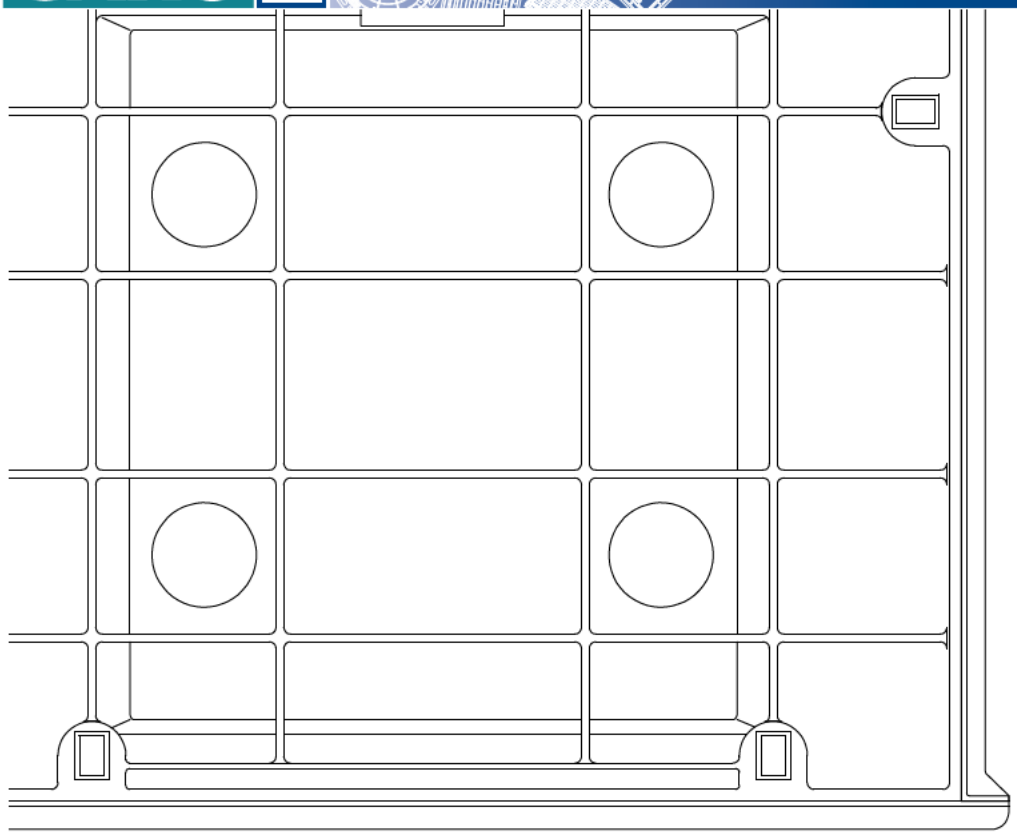
300C, 300F, 300V: Cover Circular Concrete Infilled, Flushing Point, V

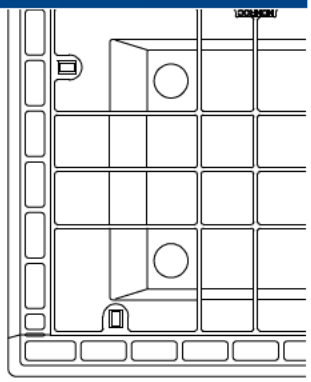


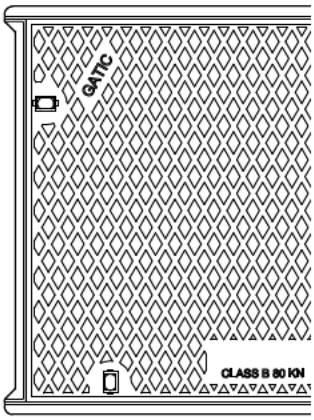
CONCRETE IN-FILLED (300FPC1)

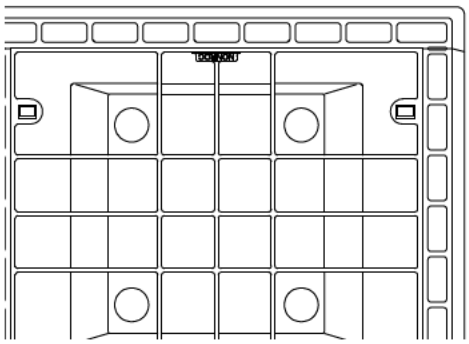


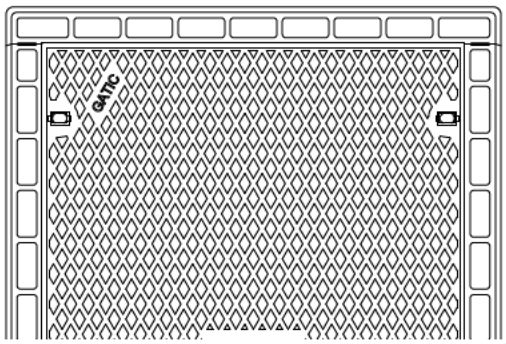
300C SECTION

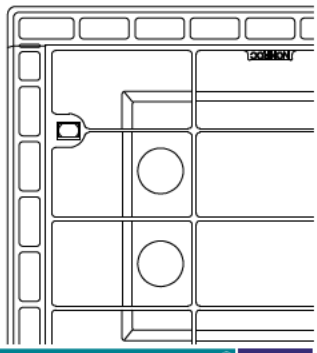





GATIC
CLASS B 80 KN




GATIC



APPLICATIONS

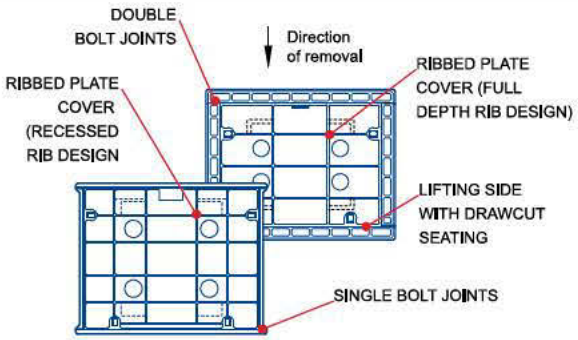
One-part square or rectangular cover and frame units are suitable for use over shaft, pit or access openings such as:

- Sewers
- Stormwater drains
- Pressure pipelines
- Cables
- Septic tanks
- Vanes and metering

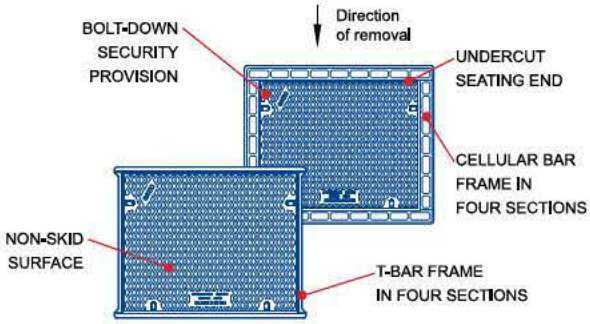
Two-part and three-part rectangular cover and frame units are designed for openings where the length is substantially larger than the width. Typical applications include:

- Cable jointing pits
- Interceptor trap pits
- Any shallow pit where a large working area is required

STANDARD REGULAR COVER UNIT FEATURES



301C - Rectangular Concrete Unfilled Unit



301S - Rectangular Solid Top Unit

Strength and Durability

- Made from ductile Iron 500-7 to AS1831 standard for superior strength to weight ratio.
- Concrete Infilled units to be filled with structural grade concrete to AS3996 standard.

Stability Under Load

- All GATIC cover and frame seating surfaces are machined for accurate, precision fit.
- Undercut seating surface design on one side of unit prevents movement of cover under load.
- Frame bar design ensures stable, permanent keying of frame in surrounding concrete.

High Seating Capability

- All bolted frame joints are sealed to minimise passage of water through the joints.
- With application of GATIC sealing compound, the machined seatings give a watertight and gas-tight fit between cover and frame.

Economical Design and Choice of Loading Capacities

- Ribbed cover design gives maximum strength for minimum weight of material.
- GATICs range of covers give a choice of load capacities to enable accurate selection to closely suit particular loading requirements. This avoids higher cost of excessive design load.

Easy, Safe Operation

- Lifting keyholes are designed to suit GATIC's range of lifting keys and devices.
- Keyholes designed to ensure that keys cannot rotate and disengage accidentally.
- Plastic plugs are fitted to exclude ingress and dirt.
- Comformance with AS3996.

Cover to Frame Matching and Orientation

- Covers and frames are manufactured in accurate matching assemblies. The cover of one unit will not necessarily fit the frame of another assembled unit.
- A cover seats properly in its frame in one orientation only.

PRODUCT CODE SPECIFICATION

301S76D

CLASS RATING *D 210kN + AS3996*

C.O. LENGTH *610mm*

C.O. WIDTH *762mm*

PRODUCT TYPE *301S - CAST IRON RECTANGULAR COVER SOLID TOP (1PART)*
301C - CAST IRON RECTANGULAR COVER CONCRETE INFILLED (1 PART)
302C - CAST IRON RECTANGULAR COVER CONCRETE INFILLED (2 PARTS)
303C - CAST IRON RECTANGULAR COVER CONCRETE INFILLED (3 PARTS

MODIFICATION OPTIONS

Increased Versatility For Standard Units

The range of modifications available has been designed to give standard GATIC units the ability to meet special needs of appearance, security, identification, operation and other functional requirements. GATIC is committed to meet your standard and non-standard modification/option requirements. Contact our nearest GATIC Sales office for further inquiries.

Available Modifications:

Units can be modified to incorporate:

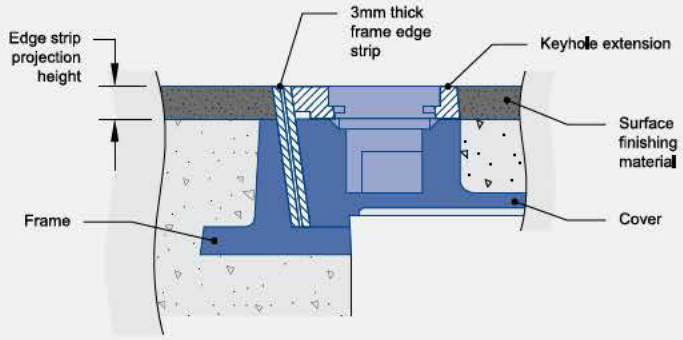
- Edge Strip Trim - brass or stainless steel
- Locks for security.
- Insert Inspection Covers and Vents.
- Special Paintwork and Finishes.
- Concrete Encasement.
- Shimmed Covers

EDGE STRIP TRIMS

- Edge strips are designed for enhancing the appearance of GATIC units installed in floors or other areas having a high quality finish, e.g., ceramic or lino tiles, terrazzo, parquetry.
- Edge strips are available in brass and stainless steel in a range of projecting heights to match different types and depths of surface finish.
- Keyhole extensions made from material matching the edge strips are fitted to covers to provide access to keyholes below the finished surface.
- Recommended for use with Class B units only.
- Specifying Edge strip option:

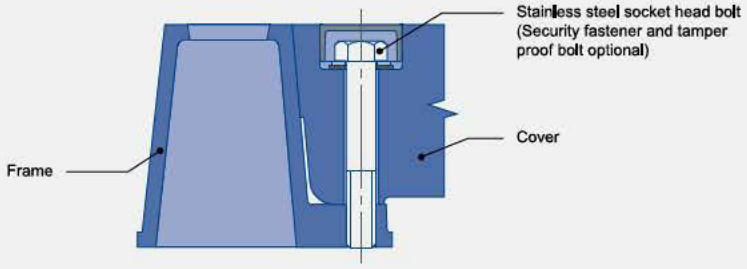
301C76DBE13

Product code | Projection Height (mm): 13, 25, 38, 50, 63 | Edge Strip Modification | Material: B - Brass, S - Stainless steel



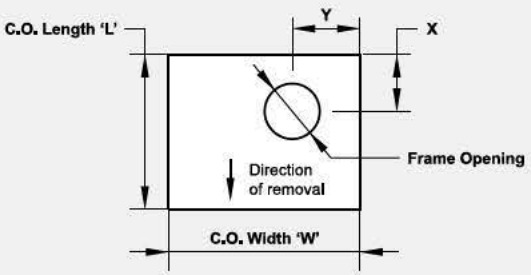
SECURITY BOLT-DOWN

- Security bolt-down is designed to withstand in-service loading as specfied
- Non corrosive fasteners
- Bolt provision can be stainless steel, security fasteners or tamper proof fasteners
- Specifying bolt-down option:
- Standard Configuration
  Class B + D 2 x 10mm S/S Bolt
  Class G 2 x 12mm S/S Bolt



INSERT INSPECTION COVERS - MADE TO ORDER

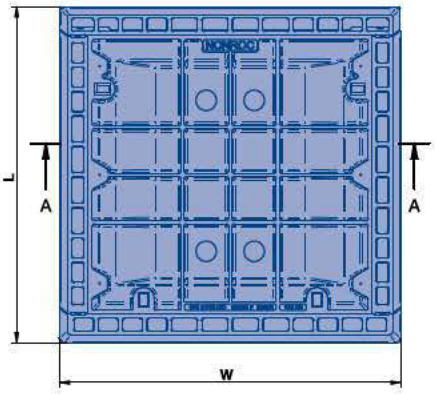
- GATIC covers can be supplied with small circular insert covers of 152mm, 229mm or 305mm frame opening diameter.
- For applications where an underground installation requires frequent inspection and where full access cover is infrequently required.
- Typical applications are over petrol tanks, sewerage pumping stations, septic tanks, valve pits and over grease and oil interceptor traps.
- Load rating will need to be recalculated, depending on location of inspection cover.



NOTE:
When specifying an insert cover which is not centrally located, a sketch showing the locating dimensions 'X' and 'Y', and insert cover diameter must be provided. This information must also be provided when the insert cover forms part of a multipart cover.

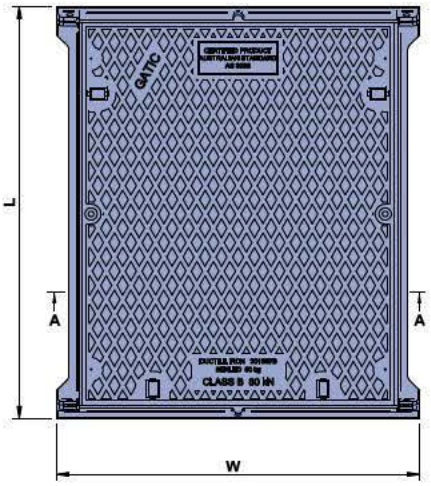
NOTE:
The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office. GATIC reserve rights to change product specifications shown without prior notice.

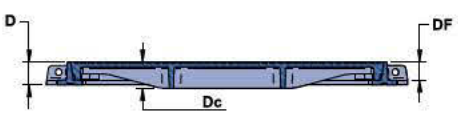
COMMON COVER DIMENSIONS



SECTION A-A

C / O	CLASS B					CLASS D					CLASS G				
WIDTH x LENGTH	W	L	D	Df	Dc	W	L	D	Df	Dc	W	L	D	Df	Dc
305 x 305						508	504	89	72	72					
457 x 457						661	656	89	72	72					
457 x 610	608	713	48	38	38	661	809	89	72	72	690	673	152	87	110
610 x 457	761	560	48	38	38	813	656	89	72	72	840	673	152	87	110
610 x 610	761	713	48	38	38	813	809	89	72	72	840	826	152	87	110
610 x 762	761	865	48	38	38	813	961	89	72	72	840	840	152	87	120
610 x 914						813	1113	89	72	72					
762 x 457						968	656	89	72	72	990	673	152	87	120
762 x 610	914	713	48	38	38	968	809	89	72	72	990	826	152	87	120
762 x 762	914	865	48	38	38	968	961	89	72	72	990	978	152	87	130
762 x 914						968	1113	89	72	72					
914 x 457	1066	560	48	38	48	1118	656	89	72	90	1142	673	152	87	130
914 x 610	1066	713	48	38	48	1118	809	89	72	90	1142	826	152	87	130
914 x 762	1066	865	48	38	48	1118	961	89	72	90	1142	978	152	87	130
914 x 914	1066	1017	48	38	48	1118	1113	89	72	90	1142	1130	152	87	130

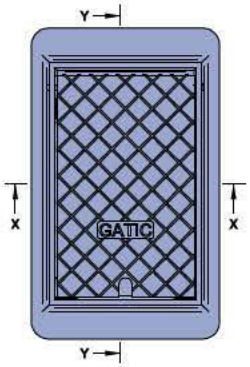


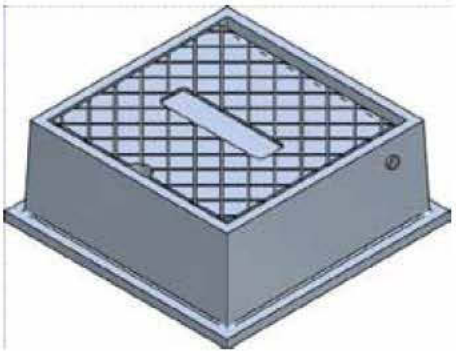


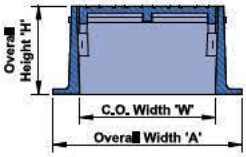
SECTION A-A

C / O	CLASS B					CLASS D				
WIDTH x LENGTH	W	L	D	Df	Dc	W	L	D	Df	Dc
457 x 457	610	560	48	38	38	661	656	89	72	72
457 x 610	610	713	48	38	38	661	809	89	72	72
610 x 457	761	560	48	38	38	813	656	89	72	80
610 x 610	761	713	48	38	55	813	809	89	72	80
610 x 762	761	865	48	38	55	813	961	89	72	80
762 x 457	914	560	48	38	55	968	656	89	72	90
762 x 610	914	713	48	38	55	968	809	89	72	90
762 x 762	914	865	48	38	60	968	961	89	72	90
914 x 457	1066	560	48	38	60	1118	656	89	72	90
914 x 610	1066	713	48	38	60	1118	809	89	72	90
914 x 914	1066	1017	48	38	65	1118	1113	89	72	90

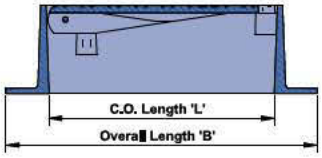
301T, 301H: Cover Rectangular/Square (1 part) Stop Tap Box, Hose Tap Box





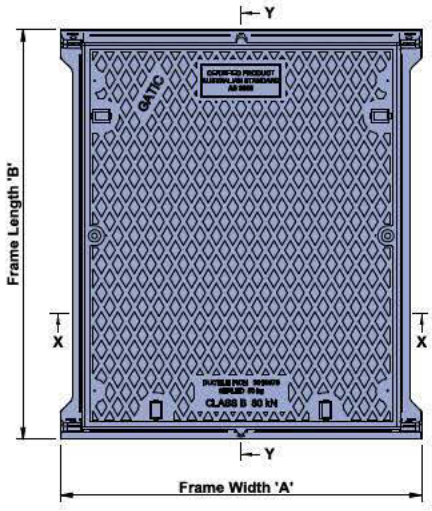


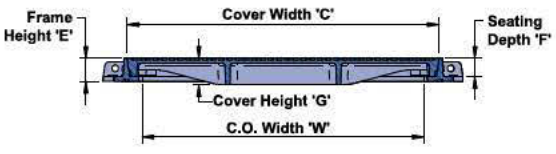
SECTION X-X



SECTION Y-Y

Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)		
			Overall Width	Overall Length	Cover Height
	W x L		A	B	H
GM710	152 x 254	B	218	360	102
GM712	102 x 102	B	162	162	73



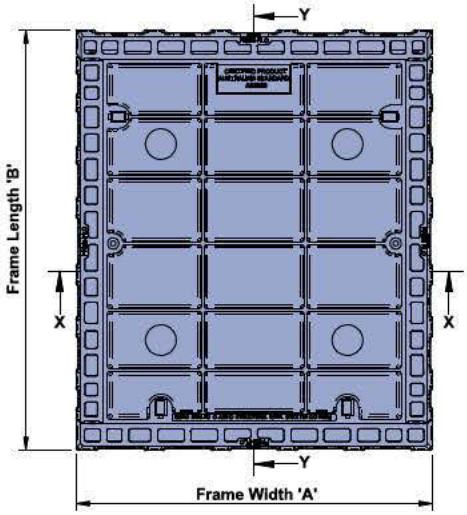


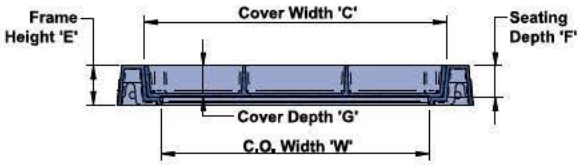
SECTION X-X

SECTION Y-Y

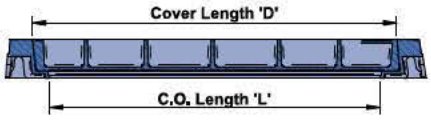
Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)						
			A	B	C	D	E	F	G
	W x L								
GM301S44B	457 x 457	B	610	560	505	500	48	38	38
GM301S46B	457 x 610	B	610	713	505	653	48	38	38
GM301S64B	610 x 457	B	761	560	658	500	48	38	38
GM301S66B	610 x 610	B	761	713	658	653	48	38	55
GM301S67B	610 x 762	B	761	865	658	805	48	38	55
GM301S74B	762 x 457	B	914	560	810	500	48	38	55
GM301S76B	762 x 610	B	914	713	810	653	48	38	55
GM301S77B	762 x 762	B	914	865	810	805	48	38	60
GM301S94B	914 x 457	B	1066	560	962	500	48	38	60
GM301S96B	914 x 610	B	1066	713	962	653	48	38	60
GM301S99B	914 x 914	B	1066	1017	962	957	48	38	65
GM301S44D	457 x 457	D	661	656	537	527	89	72	72
GM301S46D	457 x 610	D	661	809	537	680	89	72	72
GM301S64D	610 x 457	D	813	656	690	527	89	72	72
GM301S66D	610 x 610	D	813	809	766	680	89	72	72
GM301S67D	610 x 762	D	813	961	690	832	89	72	72
GM301S74D	762 x 457	D	968	656	842	527	89	72	72
GM301S76D	762 x 610	D	968	809	842	680	89	72	72
GM301S77D	762 x 762	D	968	961	842	832	89	72	90
GM301S94D	914 x 457	D	1118	656	994	527	89	72	90
GM301S96D	914 x 610	D	1118	809	994	680	89	72	90
GM301S99D	914 x 914	D	1118	1113	994	984	89	72	90

301C: Cover Rectangular/Square (1 part) Concrete InFilled





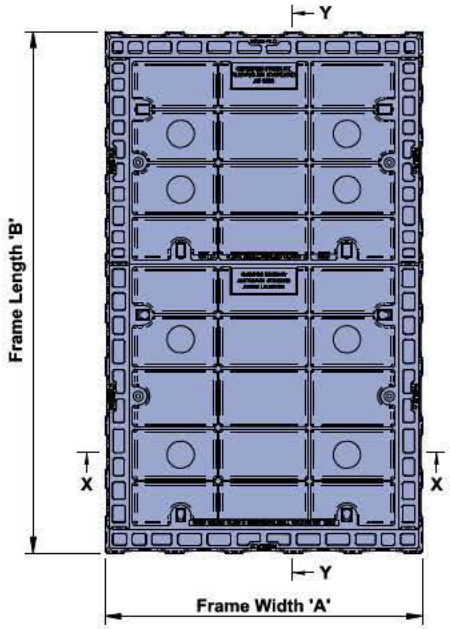
SECTION X-X

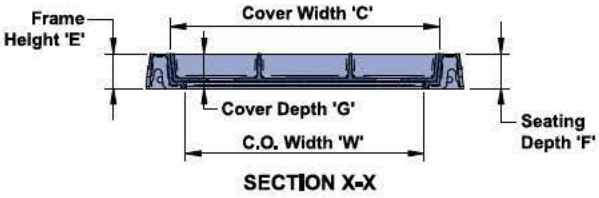


SECTION Y-Y

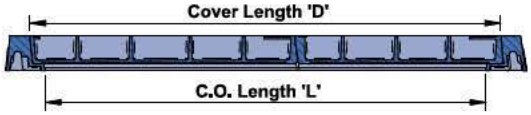
Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)						
		W x L		A	B	C	D	E	F	G
GM301C46B	E104	457 x 610	B	610	713	505	653	48	38	38
GM301C64B		610 x 457	B	761	560	658	500	48	38	38
GM301C66B	E105	610 x 610	B	761	713	658	653	48	38	38
GM301C67B		610 x 762	B	761	865	658	805	48	38	38
GM301C76B	E106	762 x 610	B	914	713	810	653	48	38	38
GM301C77B	E107	762 x 762	B	914	865	810	805	48	38	38
GM301C94B		914 x 457	B	1066	560	962	500	48	38	48
GM301C96B	E108	914 x 610	B	1066	713	962	653	48	38	48
GM301C97B		914 x 762	B	1066	865	962	805	48	38	48
GM301C99B		914 x 914	B	1066	1017	962	957	48	38	48
GM301C33D	M120	305 x 305	D	508	504	385	375	89	72	72
GM301C44D	M121D	457 x 457	D	661	656	537	527	89	72	72
GM301C46D	M122D	457 x 610	D	661	809	537	680	89	72	72
GM301C64D		610 x 457	D	813	656	690	527	89	72	72
GM301C66D	M123D	610 x 610	D	813	809	690	680	89	72	72
GM301C67D		610 x 762	D	813	961	690	832	89	72	72
GM301C69D		610 x 914	D	813	1113	690	984	89	72	72
GM301C74D		762 x 457	D	968	656	842	527	89	72	72
GM301C76D	M124D	762 x 610	D	968	809	842	680	89	72	72
GM301C77D	M125D	762 x 762	D	968	961	842	832	89	72	72
GM301C94D		914 x 457	D	1118	656	994	527	89	72	90
GM301C96D	M126D	914 x 610	D	1118	809	994	680	89	72	90
GM301C97D	M127D	914 x 762	D	1118	961	994	832	89	72	90
GM301C99D	M128D	914 x 914	D	1118	1113	994	984	89	72	90
GM301C44E	B140D	457 x 457	E	690	673	545	533	152	87	87
GM301C46E	B141D	457 x 610	E	690	826	545	686	152	87	87
GM301C66E	B142D	610 x 610	E	840	826	698	686	152	87	87
GM301C76E	B143D	762 x 610	E	990	826	850	686	152	87	87
GM301C77E	B144D	762 x 762	E	990	978	850	838	152	87	87
GM301C96E	B145D	914 x 610	E	1142	826	1002	686	152	87	87
GM301C44G		457 x 457	G	690	673	545	533	152	87	110
GM301C46G		457 x 610	G	690	826	545	686	152	87	110
GM301C64G		610 x 457	G	840	673	698	533	152	87	110
GM301C66G		610 x 610	G	840	826	698	686	152	87	110
GM301C67G		610 x 762	G	840	840	698	838	152	87	120
GM301C74G		762 x 457	G	990	673	850	533	152	87	120
GM301C76G		762 x 610	G	990	826	850	686	152	87	120
GM301C77G		762 x 762	G	990	978	850	838	152	87	130
GM301C94G		914 x 457	G	1142	673	1002	533	152	87	130
GM301C96G		914 x 610	G	1142	826	1002	686	152	87	130
GM301C97G		914 x 762	G	1142	978	1002	838	152	87	130
GM301C99G		914 X 914	G	1142	1130	1002	990	152	87	130

302C: Cover Rectangular (2 part) Concrete Infilled



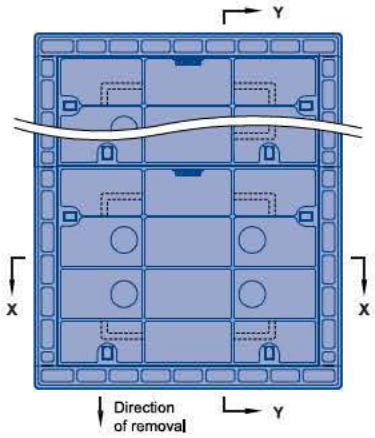


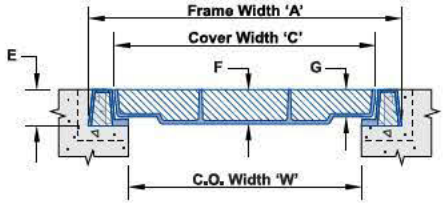
SECTION X-X



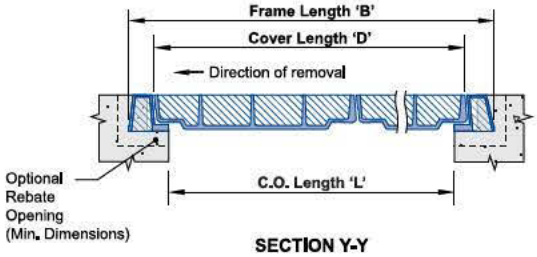
SECTION Y-Y

Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)						
		W x L		A	B	C	D	E	F	G
GM302C4595B	E104	457 x 959	B	609	1061	505	1003	48	38	38
GM302C4511B	E251	457 x 984	B	609	1213	505	1155	48	38	38
GM302C4512B	E105	457 x 990	B	609	1366	505	1308	48	38	38
GM302C6195B	E253	610 x 959	B	762	1061	658	1003	48	38	38
GM302C6111B	E106	610 x 1111	B	762	1213	658	1155	48	38	38
GM302C6112B	E107	610 x 1264	B	762	1366	658	1308	48	38	38
GM302C6114B	E256	610 x 1416	B	762	1518	658	1460	48	38	48
GM302C7115B	E108	610 x 1568	B	762	1670	658	1612	48	38	48
GM302C7695B	E258	762 x 959	B	914	1061	810	1003	48	38	38
GM302C7611B	E259	762 x 1111	B	914	1213	810	1155	48	38	48
GM302C7612B	E260	762 x 1264	B	914	1366	810	1308	48	38	38
GM302C7614B	E261	762 x 1416	B	966	1645	841	1511	48	38	38
GM302C7615B	E262	762 x 1568	B	914	1670	810	1612	48	38	38
GM302C9112B	E263	914 x 1264	B	1066	1366	962	1308	48	38	48
GM302C9114B	E264	914 x 1416	B	1066	1518	962	1460	48	38	48
GM302C9115B	E265	914 x 1568	B	1066	1670	962	1612	48	38	48
GM302C4598D	M270D	457 x 984	D	661	1061	505	1003	89	72	72
GM302C4511D	M271D	457 x 1137	D	661	1341	536	1207	89	72	72
GM302C4512D	M272D	457 x 1289	D	661	1493	536	1359	89	72	72
GM302C6198D	M273D	610 x 984	D	814	1188	689	1054	89	72	72
GM302C6111D	M274D	610 x 1137	D	814	1341	689	1207	89	72	72
GM302C6112D	M275D	610 x 1289	D	814	1493	689	1359	89	72	72
GM302C6114D	M276D	610 x 1441	D	814	1645	689	1511	89	72	72
GM302C6115D	M277D	610 x 1594	D	814	1798	689	1664	89	72	72
GM302C7612D	M280D	762 x 1289	D	966	1493	841	1359	89	72	72
GM302C7614D	M281D	762 x 1441	D	966	1645	841	1511	89	72	72
GM302C7615D	M282D	762 x 1594	D	966	1798	841	1664	89	72	72
GM302C9198D	M283D	914 x 984	D	1118	1188	993	1054	89	72	90
GM302C9112D	M284D	914 x 1289	D	1118	1493	993	1359	89	72	90
GM302C1298D		1219 x 985	D	1422	1188	1298	1055	89	72	130
GM302C4599E	B290D	457 x 990	E	685	1218	546	1066	150	87	87
GM302C4511E	B291D	457 x 1143	E	685	1271	546	1219	150	87	87
GM302C4512E	B292D	458 x 1143	E	685	1523	546	1371	150	87	87
GM302C6190E	B293D	610 x 990	E	838	1128	699	976	150	87	87
GM302C6111E	B294D	610 x 1143	E	838	1371	699	1207	150	87	87
GM302C6112E	B295D	610 x 1295	E	838	1523	699	1371	150	87	87
GM302C6114E	B296D	610 x 1448	E	838	1676	699	1524	150	87	87
GM302C6116E	B297D	610 x 1600	E	838	1828	699	1664	150	87	87
GM302C7699E	B298D	762 x 990	E	990	1218	851	1066	150	87	87
GM302C7611E	B299D	763 x 1143	E	990	1371	851	1219	150	87	87
GM302C7612E	B300D	764 x 1295	E	990	1523	851	1371	150	87	87
GM302C1099E		1067 x 990	E	1296	1219	1156	1069	150	87	87
GM302C1012E	B308D	1067 x 1295	E	1296	1523	1156	1371	150	87	87
GM302C9199G		914 x 990	G	1142	1206	1002	1066	152	87	130
GM302C9112G		914 x 1282	G	1142	1512	1002	1372	152	87	130



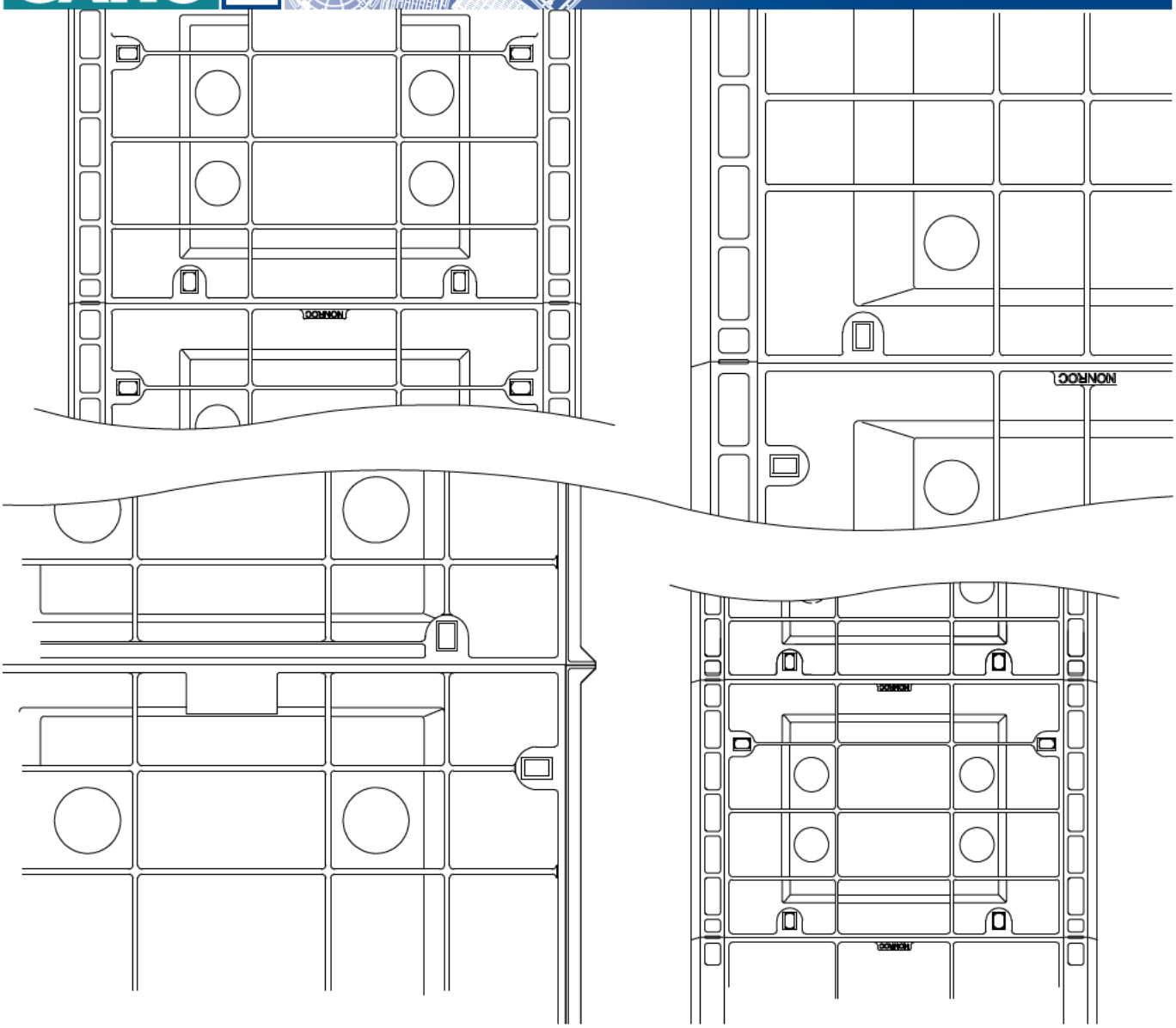


SECTION X-X



SECTION Y-Y

Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)					
		W x L		A	B	C	D	E	F
GM303C4514B	E320	457 x 1460	B	609	1562	505	1504	48	38
GM303C4515D	M340D	457 x 1511	D	661	1715	536	1581	89	72
GM303C4515E	B360D	457 x 1524	E	685	1752	546	1600	152	87
GM303C4516B	E321	457 x 1613	B	609	1715	505	1657	48	38
GM303C4516D	M341D	457 x 1664	D	661	1868	536	1734	89	72
GM303C4516E	B361D	457 x 1676	E	685	1904	546	1752	152	87
GM303C4517B	E322	457 x 1765	B	609	1867	505	1809	48	38
GM303C4518D	M342D	457 x 1816	D	661	2020	536	1886	89	72
GM303C4518E	B362D	457 x 1829	E	685	2057	546	1905	152	87
GM303C4519B	E323	457 x 1918	B	609	2020	505	1962	48	38
GM303C4519D	M343D	457 x 1968	D	661	2172	536	2038	89	72
GM303C4519E	B363D	457 x 1981	E	685	2209	546	2057	152	87
GM303C6116B	E324	610 x 1613	B	762	1715	658	1657	48	38
GM303C6116D	M344D	610 x 1664	D	814	1868	689	1734	89	72
GM303C6116E	B364D	610 x 1676	E	838	1904	699	1752	152	87
GM303C6117B	E325	610 x 1765	B	762	1867	658	1809	48	38
GM303C6118D	M345D	610 x 1816	D	814	2020	689	1886	89	72
GM303C6118E	B365D	610 x 1829	E	838	2057	699	1905	152	87
GM303C6119B	E326	610 x 1918	B	762	2020	658	1962	48	38
GM303C6119D	M346D	610 x 1968	D	814	2172	689	2038	89	72
GM303C6119E	B366D	610 x 1981	E	838	2209	699	2057	152	87
GM303C6120B	E327	610 x 2070	B	762	2172	658	2114	48	38
GM303C6121D	M347D	610 x 2121	D	814	2325	689	2191	89	72
GM303C6122B	E328	610 x 2223	B	762	2325	658	2267	48	38
GM303C6122D	M348D	610 x 2273	D	814	2477	689	2343	89	72
GM303C6123B	E329	610 x 2375	B	762	2477	658	2419	48	38
GM303C6124D	M349D	610 x 2426	D	814	2630	689	2496	89	72
GM303C7616B	E330	762 x 1613	B	914	1715	810	1657	48	38
GM303C7616E	B370D	762 x 1676	E	990	1904	851	1752	152	87
GM303C7617B	E331	762 x 1765	B	914	1867	810	1809	48	38
GM303C7618E	B371D	762 x 1829	E	990	2057	851	1905	152	87
GM303C7619B	E332	762 x 1918	B	914	2020	810	1962	48	38
GM303C7619D	M352D	762 x 1968	D	966	2172	841	2038	89	72
GM303C7619E	B372D	762 x 1981	E	990	2209	851	2057	152	87
GM303C7620B	E333	762 x 2070	B	914	2172	810	2114	48	38
GM303C7621D	M353D	762 x 2121	D	966	2325	841	2191	89	72
GM303C7622B	E334	762 x 2223	B	914	2325	810	2267	48	38
GM303C7622D	M354D	762 x 2273	D	966	2477	841	2343	89	72
GM303C7623B	E335	762 x 2375	B	914	2477	810	2419	48	38
GM303C7624D	M355D	762 x 2426	D	966	2630	841	2496	89	72
GM303C9118D	M356D	914 x 1816	D	1118	2020	993	1886	89	72
GM303C9119B	E336	914 x 1918	B	1066	2020	962	1962	48	38
GM303C9119D	M357D	914 x 1968	D	1118	2172	993	2038	89	72
GM303C9119E	B376D	914 x 1981	E	1142	2209	1003	2057	152	87
GM303C9120B	E337	914 x 2070	B	1066	2172	962	2114	48	38
GM303C9121D	M358D	914 x 2121	D	1118	2325	993	2191	89	90
GM303C9122B	E338	914 x 2223	B	1066	2325	962	2267	48	48
GM303C9122D	M359D	914 x 2273	D	1118	2477	993	2343	89	90
GM303C9122B	E339	914 x 2275	B	1066	2377	962	2319	48	48
GM303C1015E	B381D	1067 x 1523	E	1296	1752	1156	1602	152	87
GM303C1016E		1067 x 1676	E	1296	1905	1156	1755	152	87
GM303C1019E	B380D	1067 x 1981	E	1296	2210	1156	2060	152	87
GM303C1215D		1219 x 1512	D	1422	1715	1298	1582	89	130



APPLICATIONS

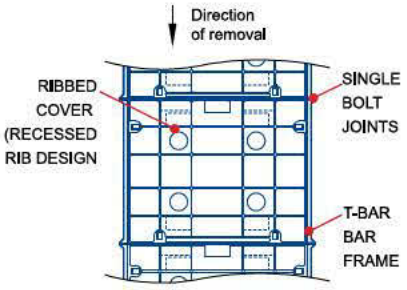
GATIC's range of trench covers and frames has been designed to suit openings ranging from:

- Single, straight trench runs of constant width and unrestricted length.
- Complex systems of trench runs having junctions, cross-overs, bends and other changes in direction and trench width.

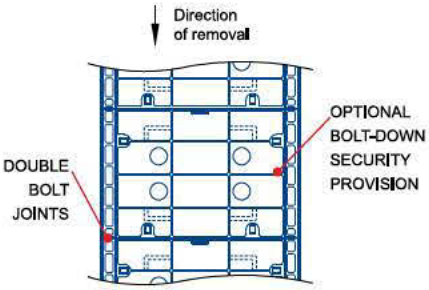
Typical applications include:

- Power or telephone cable ducts
- Oil, steam, or gas conduit trenches
- Service trenches for chemical and other fluid pipelines

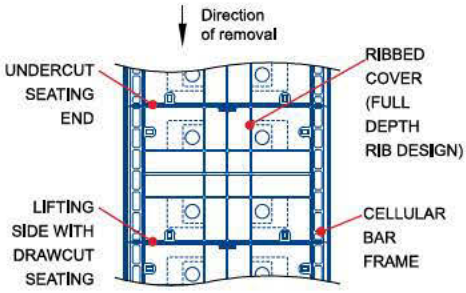
STANDARD RECTANGULAR COVER UNIT FEATURES



Class B 80kN Trench Runs



Class D 210kN Trench Runs



Class G 900kN Trench Runs

Main Design Features

- Modular design - trench runs are built from a range of standard covers and bolted frame sections to suit any required length.
- Unresticted trench access - covers can be removed individually for partial or complete access to the trench.

Strength and Durability

- Made from ductile Iron 500-7 to AS1831 standard for superior strength to weight ratio.
- Concrete Infilled units are to be filled with structural grade concrete to AS3996 standard.
- The matching undercut and drawcut sides of adjacent covers give adequate stability and strength without the need for cross supports.

Stability Under Load

- All GATIC cover and frame seating surfaces are machined for accurate, precision fit.
- Undercut seating surface design on one side of unit prevents movement of cover under load.
- Frame bar design ensures stable, permanent keying of frame in surrounding concrete.

High Seating Capability

- All bolted frame joints are sealed to minimise passage of water through the joints.
- With application of GATIC sealing compound, the machined seatings give a watertight and gas-tight fit between cover and frame.

Economical Design and Choice of Loading Capacities

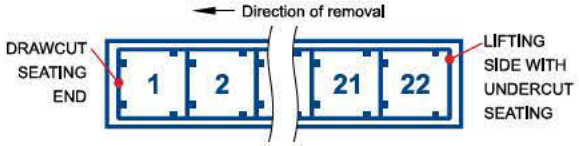
- Ribbed cover design gives maximum strength for minimum weight of material.

Easy, Safe Operation

- Lifting keyholes are designed to suit GATIC's range of lifting keys and devices.
- Keyholes designed to ensure that keys cannot rotate and disengage accidentally.
- Plastic plugs are fitted to exclude ingress and dirt.

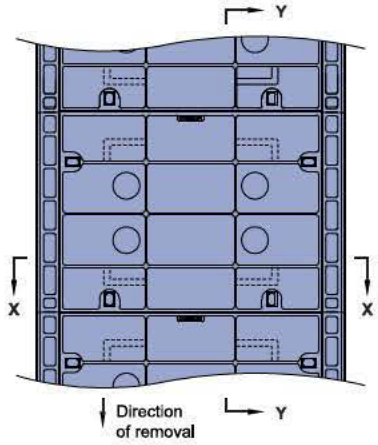
Cover to Frame Matching and Orientation

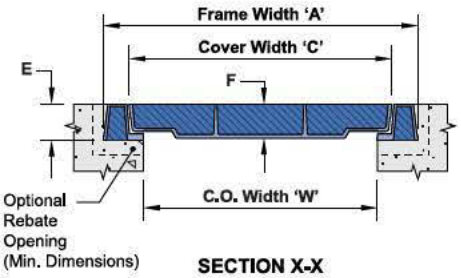
- Covers are numbered and matched individually to designated locations in the frame and must be installed and replaced in these positions. (see below)



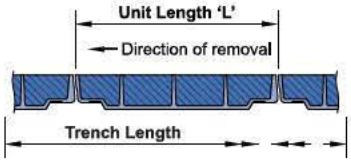
PRODUCT CODE SPECIFICATION

309C: Cover Rectangular (Trench Run) Concrete Infilled





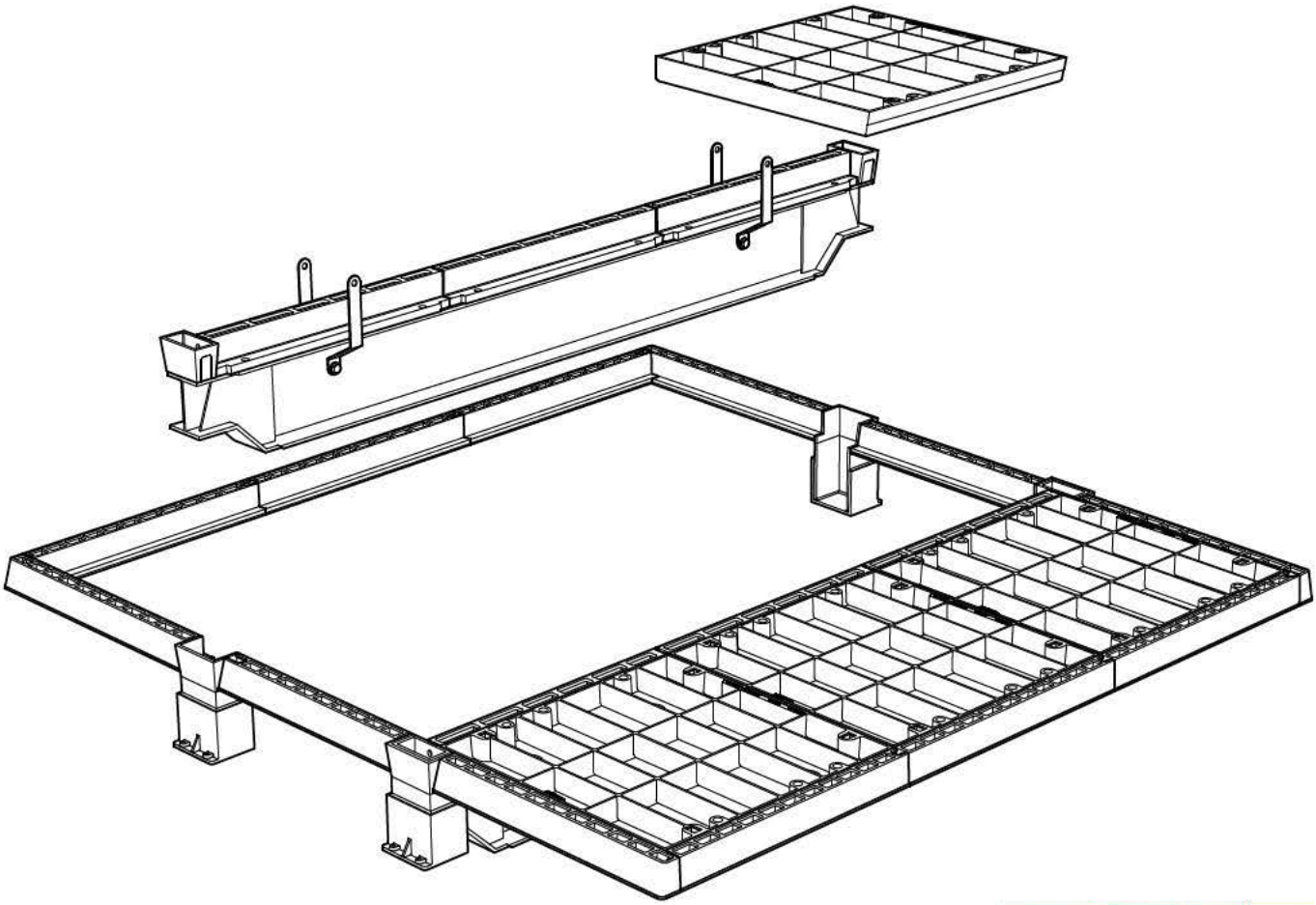
SECTION X-X



SECTION Y-Y

Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)				Cover & Frame Std
		W		A	C	E	F	Unit Length (L)
GM309C33B		305	B	457	353	48	38	349
GM309C33D		305	D	508	384	89	72	375
GM309C43B		457	B	609	505	48	38	349
GM309C45B		457	B	609	505	48	38	501
GM309C45D		457	D	660	536	89	72	527
GM309C45E		457	E	686	546	152	87	533
GM309C46B		457	B	609	505	48	38	654
GM309C46D		457	D	660	536	89	72	680
GM309C46E		457	E	686	546	152	87	686
GM309C66B		610	B	762	658	48	38	654
GM309C66D		610	D	813	689	89	72	680
GM309C66E		610	E	839	699	152	87	686
GM309C76B		762	B	914	810	48	38	654
GM309C76D		762	D	965	841	89	72	680
GM309C76E		762	E	991	851	152	87	686
GM309C78B		762	B	914	810	48	38	806
GM309C78D		762	D	965	841	89	72	832
GM309C78E		762	E	991	851	152	87	838
GM309C96B		914	B	1066	962	48	48	654
GM309C96D		914	D	1117	993	89	90	680
GM309C96E		914	E	1143	1003	152	87	686
GM309C98D		914	D	1117	993	89	90	832
GM309C99B		914	B	1066	962	48	48	958
GM309C99D		914	D	1117	993	89	90	984
GM309C99E		914	E	1143	1003	152	87	990
GM309C16E		1067	E	1296	1156	152	87	686
GM309C12D		1220	D	1422	1298	89	130	527

NOTE: Other configurations available on request



APPLICATIONS

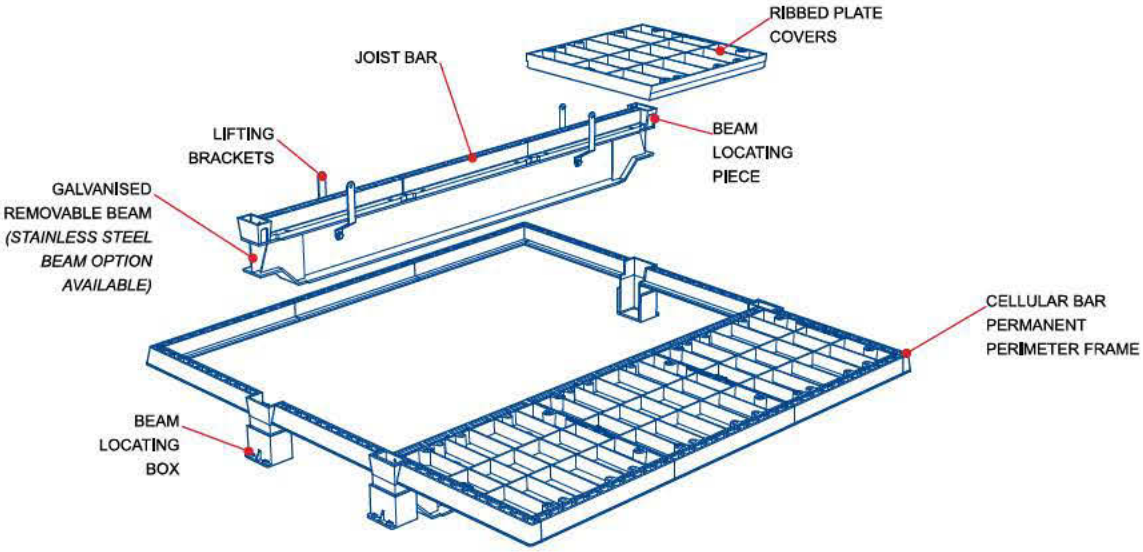
The GATIC multi-part system has been designed for rectangular openings too large to be covered by two-part or three-part covers, or by a single row of trench covers.

Typical applications for multi-part covers and frames are for pit and floor openings over:

- Transformers
- Stand-by generator sets
- Lift wells
- Valve installations and other items of plant and machinery

- Wide trench runs requiring more than one row of covers in the run
- Covers within a unit can be removed individually to allow localised access to the pit or floor opening, the remaining covers providing a stable, safe working platform over the opening
- Complete access to the pit or floor opening can obtained by removal of all covers and beam supports

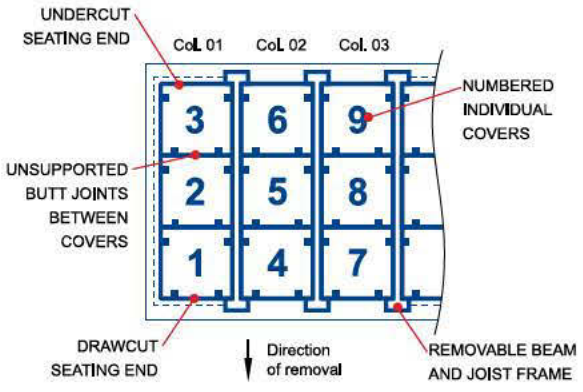
STANDARD MULTI-PART COVER & FRAME SYSTEM FEATURES



304C - Multi-part Cover & Frame System

GATIC's multipart system uses two or more rows of covers side by side, seated and supported as follows:

- Adjacent rows are seated over the opening by a common joist frame supported and fixed to a removable steel beam.
- The mating undercut/drawcut butt joints of covers within each row provide adequate strength and stability without need for cross supports over the opening.
- Covers are seated and supported at the perimeter of the opening by permanently grouted framework.
- There is no limit to the number of rows that can be used - the range of standard units uses up to six rows.
- As the weight and depth of a beam increases with beam length, the number of covers used per row is limited by the maximum, practical beam length available - up to four covers per row are used in the range of standard units.
- Covers are numbered and matched individually to designated locations in the frame and must be installed and replaced in these positions.
- Covers are removed individually in the one direction (away from the undercut seating end of the frame).
- Covers can be removed for partial or complete access to the opening to the opening as required.



Multipart Cover & Frame Numbering System

APPLICATIONS

Standard Units

Standard Multi-part units are made to order from a range of cover, frame and steel beam modules. A large range of sizes are available in Class B, D, E, F & G in accordance with Australian Standard AS3996:2006. Standard units are available with the following features:

Concrete Infill

- Structural grade concrete is required for the on-site filling of all covers and frames.
- Concrete Infilled units are filled with structural grade concrete to AS3996 standard.

Rebates

- Pit and floor slab openings are formed with a continuous rebate for the perimeter frame and additional rebates for beam locating boxes.

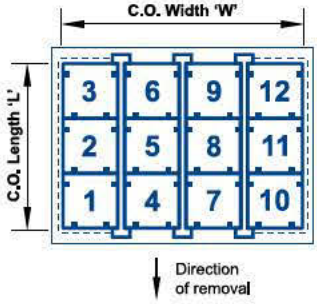
Beam Sizes

- Beam depth varies with duty rating and beam length.
- Deep beams can be supplied with cut-down ends for floor slabs where headroom is a problem.
- Beams are galvanised for protection in corrosive environment (stainless steel fabricated beams are available).

Non-Standard Units

Units can be designed and made to suit any particular requirements. Contact your nearest GATIC office for assistance.

CLEAR OPENING SIZE

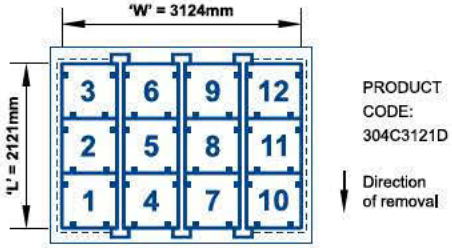


Clear opening size is specified by the clear opening width (W) and clear opening length (L). Clear opening width (W) is taken at right angles to the removable beams and clear opening length (L) is taken parallel to the beams.

Preferred Beam Orientation

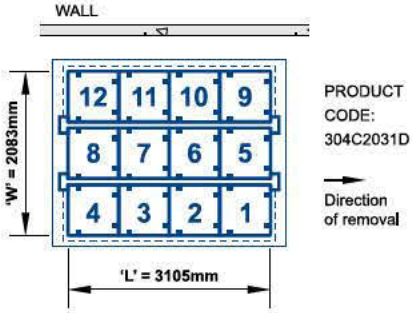
The orientation of beams across an opening is parallel to the clear opening length (L) in all preceding tables. Where one clear opening dimension exceeds 2743mm the lesser dimension should be chosen as the length (L) dimension, i.e., the beams are parallel to the shorter opening and, therefore, lighter and easier to remove and replace.

e.g. For a Class D 210kN rated, 12-parts cover of 3000 x 2000mm Clear Opening size:



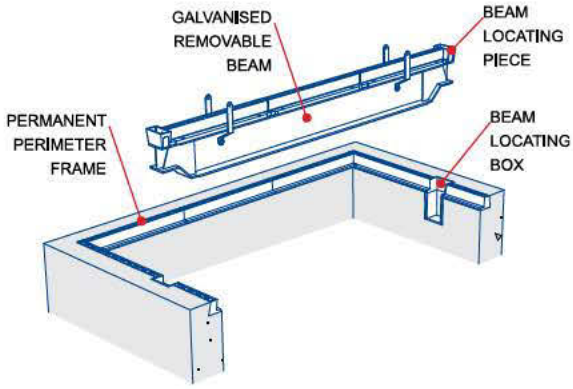
However, if a wall or other obstruction closely adjoins the opening, the beams (dimension L) should be oriented parallel to the wall for easy access to the beam ends during removal and replacement.

e.g. For the same 12-parts cover of 3000 x 2000mm Clear Opening size. Note that in this case, the beams are longer.



Location of Removable Beams

The ends of the removable beams are located accurately and supported by beam locating boxes which form an intergral part of the permanent perimeter frame, when all covers and beams are removed, the full cross section of the opening can be accessed.



Location of Removable Beams

Symmetry of Cover Joint Lines

Where appearance is important, particularly where edge strips are used, multi-part covers having symmetrical joint lines about the centrelines should be selected.

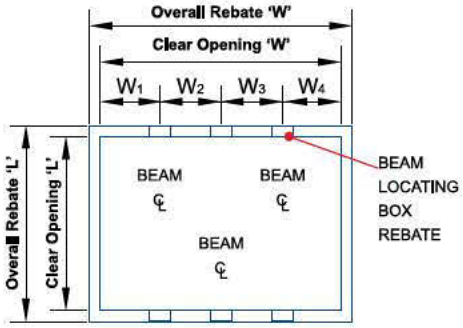
Symmetrical joint lines are indicated in the tables by product numbers shown in bold typeface. All other product numbers indicate joints asymmetrical about one or both centrelines.

REBATE SPECIFICATION

Complete rebate specification requires the dimensions of:

- Clear Opening width (W) and length (L)
- Continuous frame perimeter rebate width and depth
- Centre line distances (W1, W2, W3 ...) of beam locating
- box rebates.
- Beam locating box rebate width and depth

Beam locating box rebate depth varies with beam depth (where the clear opening length (L) exceeds 2134mm, supports



PRODUCT CODE SPECIFICATION

304C1011D

- **CLASS RATING** *AS3996*
- **C.O. LENGTH** *1147mm*
- **C.O. WIDTH** *1042mm*
- **PRODUCT TYPE** *304C - CAST IRON RECTANGULAR COVER CONCRETE INFILLED MULTI-PARTS*

MODIFICATION OPTIONS

Increased Versatility For Standard Units

The range of modifications available has been designed to give standard GATIC units the ability to meet special needs of appearance, security, identification, operation and other functional requirements. GATIC is comitted to meet your standard and non-standard modification/option requirements, contact our Sales office for further inquiries.

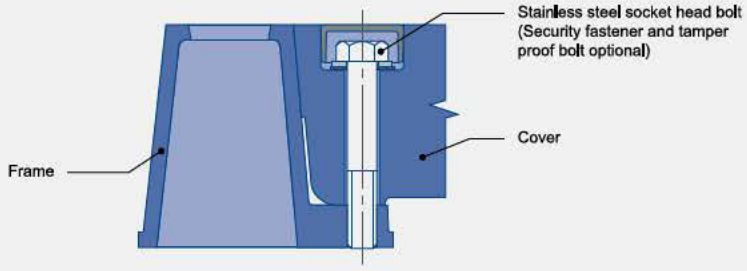
Available Modifications:

Multipart units can be modified to incorporate:

- Holding-down Bolts and Locks for security
- Insert Inspection Covers and Vents
- Special Paintwork and Finishes
- Stainless steel fabricated beams
- Fixed or removable beams where there is no support for the perimeter frame on one or two opposite sides of an opening

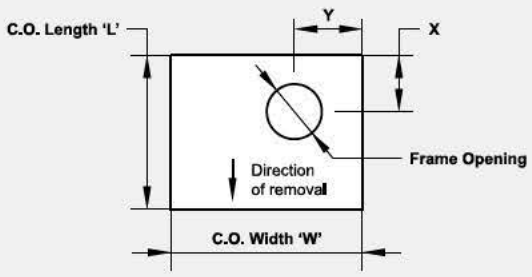
SECURITY BOLT-DOWN

- Security bolt-down is designed to withstand in-service loading as specfied
- Non corrosive fasteners
- Bolt provision can be stainless steel, security fasteners or tamper proof fasteners
- Specifying bolt-down option:
- Standard Configuration
  Class B + D 2 x 10mm S/S Bolt
  Class G 2 x 12mm S/S Bolt



INSERT INSPECTION COVERS - MADE TO ORDER

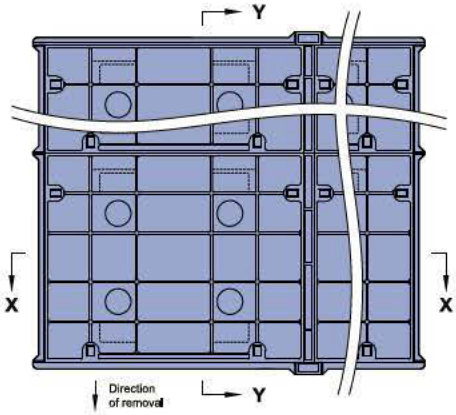
- GATIC covers can be supplied with small circular insert covers of 152mm, 229mm or 305mm frame opening diameter.
- For applications where an underground installation requires frequent inspection and where full access cover is infrequently required.
- Typical applications are over petrol tanks, sewerage pumping stations, septic tanks, valve pits and over grease and oil interceptor traps.
- Load rating will need to be recalculated, depending on location of inspection cover.

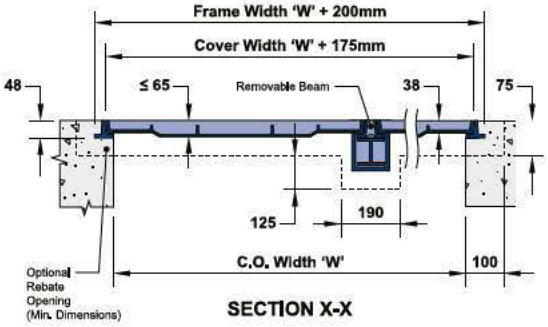


NOTE:
When specifying an insert cover which is not centrally located, a sketch showing the locating dimensions 'X' and 'Y', and insert cover diameter must be provided. This information must also be provided when the insert cover forms part of a multipart cover.

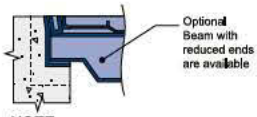
NOTE:
The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office.
GATIC reserve rights to change product specifications shown without prior notice.

GM304C: Rectangular Concrete Infilled Cover & Frame (Multi-Parts) CLASS B

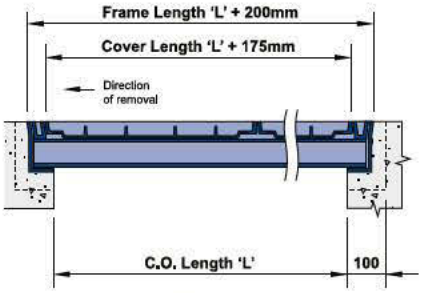




SECTION X-X



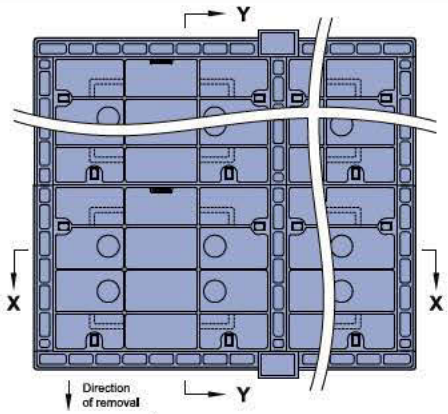
NOTE:
- Clear opening Width 'W' is taken at right angles to the removable beams.
- Clear Opening Length 'L' is taken as parallel with removable beams.
- GATIC frame can be installed as a two part process by first casting a rebate according to recommended rebate sizes and then casting the frame into the rebate. Alternatively, the most cost effective methos id to cast the frame in when pouring the pit walls.
- CAST IN-SITU - (Concrete casting shal have good abrasive resistance and the minimum cement content of 400 kg/m^3. Concrete shall be appropriately wet-cured).
- The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office. GATIC reserves the right to change product specifications shown without prior notice.

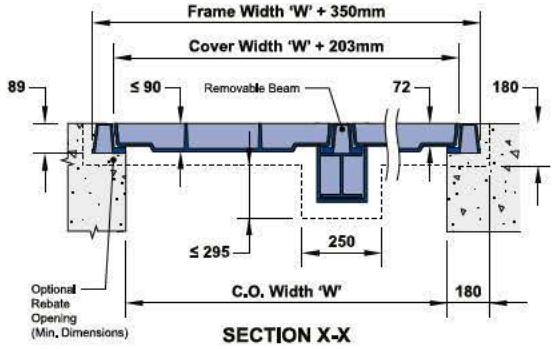


SECTION Y-Y

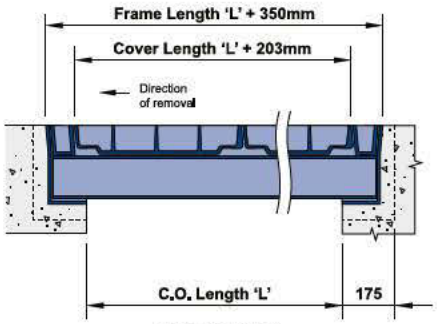
C.O. Width 'W' (mm)	C.O. Length 'L' (mm)													
	1111	1264	1416	1568	1765	1918	2070	2223	2375	2572	2742	2877	3029	3181
	4 PART				6 PART					8 PART				
990	GM9911B	GM9912B			GM9917B	GM9919B				GM9925B				
1143	GM1111B	GM1112B	GM1214B	GM1215B										
1296	GM1211B	GM1212B					GM1220B	GM1222B	GM1223B		GM1227B	GM1228B	GM1230B	GM1231B
1448	GM1411B	GM1412B	GM1414B	GM1415B	GM1417B	GM1419B	GM1420B	GM1422B	GM1423B	GM1425B	GM1427B	GM1428B	GM1430B	GM1431B
1600	GM1611B	GM1612B	GM1614B	GM1615B	GM1617B	GM1619B	GM1620B	GM1622B	GM1623B	GM1625B	GM1627B	GM1628B	GM1630B	GM1631B
	6 PART				9 PART					12 PART				
1829	GM1811B	GM1812B	-	-	GM1817B	GM1819B	-	-	-	GM1825B	GM1827B	-	-	-
1982	GM1911B	GM1912B	GM1914B	GM1915B	GM1917B	GM1919B	GM1920B	GM1922B	GM1923B	GM1925B	GM1927B	GM1928B	GM1930B	GM1931B
2134	GM2111B	GM2112B	GM2114B	GM2115B	GM2117B	GM2119B	GM2120B	GM2122B	GM2123B	GM2125B	GM2127B	GM2128B	GM2130B	GM2131B
2286	GM2211B	GM2212B	GM2214B	GM2215B	GM2217B	GM2219B	GM2220B	GM2222B	GM2223B	GM2225B	GM2227B	GM2228B	GM2230B	GM2231B
2438	GM2411B	GM2412B	GM2414B	GM2415B	GM2417B	GM2419B	GM2420B	GM2422B	GM2423B	GM2425B	GM2427B	GM2428B	GM2430B	GM2431B
	8 PART				12 PART					16 PART				
2668	GM2611B	GM2612B	GM2614B	GM2615B	GM2617B	GM2619B	GM2620B	GM2622B	GM2623B	GM2625B	GM2627B	GM2628B	GM2630B	GM2631B
2820	GM2811B	GM2812B	GM2814B	GM2815B	GM2817B	GM2819B	GM2820B	GM2822B	GM2823B	GM2825B	GM2827B	GM2828B	GM2830B	GM2831B
2972	GM2911B	GM2912B	GM2914B	GM2915B	GM2917B	GM2919B	GM2920B	GM2922B	GM2923B	GM2925B	GM2927B	GM2928B	GM2930B	GM2931B
3124	GM3111B	GM3112B	GM3114B	GM3115B	GM3117B	GM3119B	GM3120B	GM3122B	GM3123B	GM3125B	GM3127B	GM3128B	GM3130B	GM3131B
3276	GM3211B	GM3212B	GM3214B	GM3215B	GM3217B	GM3219B	GM3220B	GM3222B	GM3223B	GM3225B	GM3227B	GM3228B	GM3230B	GM3231B
	10 PART				15 PART					20 PART				
3354	GM3311B	GM3312B	GM3314B	GM3315B	GM3317B	GM3319B	GM3320B	GM3322B	GM3323B	GM3325B	GM3327B	GM3328B	GM3330B	GM3331B
3506	GM3511B	GM3512B	GM3514B	GM3515B	GM3517B	GM3519B	GM3520B	GM3522B	GM3523B	GM3525B	GM3527B	GM3528B	GM3530B	GM3531B
3658	GM3611B	GM3612B	GM3614B	GM3615B	GM3617B	GM3619B	GM3620B	GM3622B	GM3623B	GM3625B	GM3627B	GM3628B	GM3630B	GM3631B
3810	GM3811B	GM3812B	GM3814B	GM3815B	GM3817B	GM3819B	GM3820B	GM3822B	GM3823B	GM3825B	GM3827B	GM3828B	GM3830B	GM3831B
3962	GM3911B	GM3912B	GM3914B	GM3915B	GM3917B	GM3919B	GM3920B	GM3922B	GM3923B	GM3925B	GM3927B	GM3928B	GM3930B	GM3931B
	12 PART				18 PART					24 PART				
4040	GM4011B	GM4012B	GM4014B	GM4015B	GM4017B	GM4019B	GM4020B	GM4022B	GM4023B	GM4025B	GM4027B	GM4028B	GM4030B	GM4031B
4114	GM4111B	GM4112B	GM4114B	GM4115B	GM4117B	GM4119B	GM4120B	GM4122B	GM4123B	GM4125B	GM4127B	GM4128B	GM4130B	GM4131B
4192	GM4111B2	GM4112B2	GM4114B2	GM4115B2	GM4117B2	GM4119B2	GM4120B2	GM4122B2	GM4123B2	GM4125B2	GM4127B2	GM4128B2	GM4130B2	GM4131B2
4344	GM4311B	GM4312B	GM4314B	GM4315B	GM4317B	GM4319B	GM4320B	GM4322B	GM4323B	GM4325B	GM4327B	GM4328B	GM4330B	GM4331B
4496	GM4411B	GM4412B	GM4414B	GM4415B	GM4417B	GM4419B	GM4420B	GM4422B	GM4423B	GM4425B	GM4427B	GM4428B	GM4430B	GM4431B
4648	GM4611B	GM4612B	GM4614B	GM4615B	GM4617B	GM4619B	GM4620B	GM4622B	GM4623B	GM4625B	GM4627B	GM4628B	GM4630B	GM4631B
4800	GM4811B	GM4812B	GM4814B	GM4815B	GM4817B	GM4819B	GM4820B	GM4822B	GM4823B	GM4825B	GM4827B	GM4828B	GM4830B	GM4831B
4952	GM4911B	GM4912B	GM4914B	GM4915B	GM4917B	GM4919B	GM4920B	GM4922B	GM4923B	GM4925B	GM4927B	GM4928B	GM4930B	GM4931B

GM304C: Rectangular Concrete Infilled Cover & Frame (Multi-Parts) CLASS D





SECTION X-X

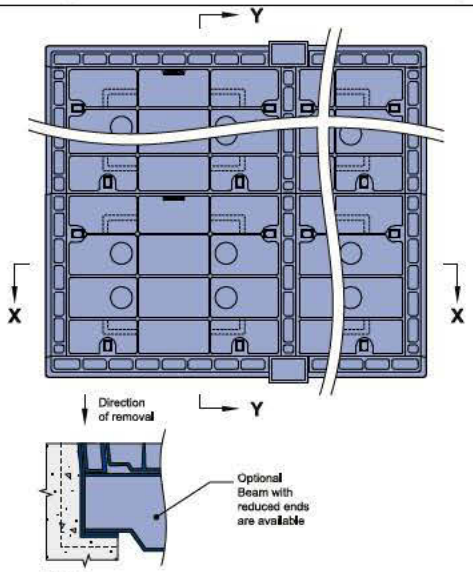


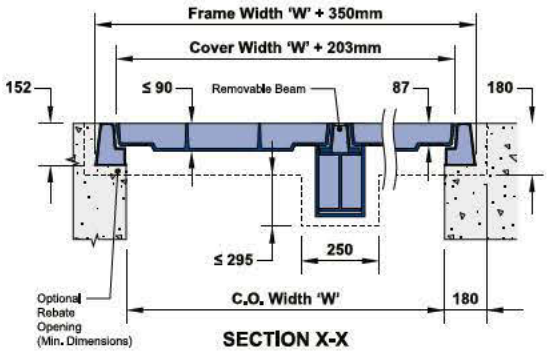
SECTION Y-Y

NOTE:
- Clear opening Width 'W' is taken at right angles to the removable beams.
- Clear Opening Length 'L' is taken as parallel with removable beams.
- GATIC frame can be installed as a two part process by first casting a rebate according to recommended rebate sizes and then casting the frame into the rebate. Alternatively, the most cost effective methos id to cast the frame in when pouring the pit walls.
- The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office. GATIC reserves the right to change product specifications shown without prior notice.

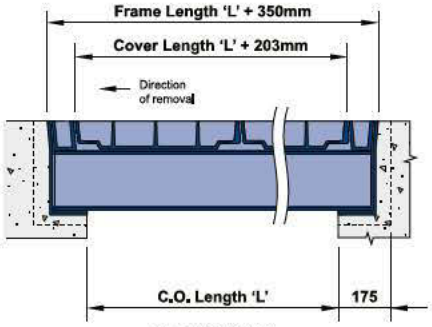
C.O. Width 'W' (mm)	C.O. Length 'L' (mm)													
	1137	1289	1441	1594	1816	1968	2121	2273	2426	2648	2800	2953	3105	3258
	4 PART				6 PART					8 PART				
1042	GM1011D	GM1012D	-	-	GM1016D	GM1019D	-	-	-	GM1026D	-	-	-	-
1194	GM1111D	GM1112D	-	-	GM1116D	GM1119D	-	-	-	GM1126D	-	-	-	-
1346	GM1311D	GM1312D	GM1314D	GM1315D	GM1316D	GM1319D	GM1321D	GM1322D	GM1324D	GM1326D	GM1328D	GM1329D	GM1331D	GM1332D
1499	GM1411D	GM1412D	GM1414D	GM1415D	GM1416D	GM1419D	GM1421D	GM1422D	GM1424D	GM1426D	GM1428D	GM1429D	GM1431D	GM1432D
1652	GM1611D	GM1612D	GM1614D	GM1615D	GM1616D	GM1619D	GM1621D	GM1622D	GM1624D	GM1626D	GM1628D	GM1629D	GM1631D	GM1632D
	6 PART				9 PART					12 PART				
1930	GM1911D	GM1912D	-	-	GM1916D	GM1919D	-	-	-	GM1926D	-	-	-	-
2083	GM2011D	GM2012D	GM2014D	GM2015D	GM2016D	GM2019D	GM2021D	GM2022D	GM2024D	GM2026D	GM2028D	GM2029D	GM2031D	GM2032D
2235	GM2211D	GM2212D	GM2214D	GM2215D	GM2216D	GM2219D	GM2221D	GM2222D	GM2224D	GM2226D	GM2228D	GM2229D	GM2231D	GM2232D
2389	GM2311D	GM2312D	GM2314D	GM2315D	GM2316D	GM2319D	GM2321D	GM2322D	GM2324D	GM2326D	GM2328D	GM2329D	GM2331D	GM2332D
2540	GM2511D	GM2512D	GM2514D	GM2515D	GM2516D	GM2519D	GM2521D	GM2522D	GM2524D	GM2526D	GM2528D	GM2529D	GM2531D	GM2532D
	8 PART				12 PART					16 PART				
2820	GM2811D	GM2912D	GM2914D	GM2915D	GM2916D	GM2919D	GM2921D	GM2922D	GM2924D	GM2926D	GM2928D	GM2929D	GM2931D	GM2932D
2973	GM2911D	GM2912D	GM2914D	GM2915D	GM2916D	GM2919D	GM2921D	GM2922D	GM2924D	GM2926D	GM2928D	GM2929D	GM2931D	GM2932D
3124	GM3111D	GM3112D	GM3114D	GM3115D	GM3116D	GM3119D	GM3121D	GM3122D	GM3124D	GM3126D	GM3128D	GM3129D	GM3131D	GM3132D
3277	GM3211D	GM3212D	GM3214D	GM3215D	GM3216D	GM3219D	GM3221D	GM3222D	GM3224D	GM3226D	GM3228D	GM3229D	GM3231D	GM3232D
3429	GM3411D	GM3412D	GM3414D	GM3415D	GM3416D	GM3419D	GM3421D	GM3422D	GM3424D	GM3426D	GM3428D	GM3429D	GM3431D	GM3432D
	10 PART				15 PART					20 PART				
3556	GM3511D	GM3512D	GM3514D	GM3515D	GM3516D	GM3519D	GM3521D	GM3522D	GM3524D	GM3526D	GM3528D	GM3529D	GM3531D	GM3532D
3708	GM3711D	GM3812D	GM3814D	GM3815D	GM3816D	GM3819D	GM3821D	GM3822D	GM3824D	GM3826D	GM3828D	GM3829D	GM3831D	GM3832D
3861	GM3811D	GM3812D	GM3814D	GM3815D	GM3816D	GM3819D	GM3821D	GM3822D	GM3824D	GM3826D	GM3828D	GM3829D	GM3831D	GM3832D
4013	GM4011D	GM4012D	GM4014D	GM4015D	GM4016D	GM4019D	GM4021D	GM4022D	GM4024D	GM4026D	GM4028D	GM4029D	GM4031D	GM4032D
4166	GM4111D	GM4112D	GM4114D	GM4115D	GM4116D	GM4119D	GM4121D	GM4122D	GM4124D	GM4126D	GM4128D	GM4129D	GM4131D	GM4132D
	12 PART				18 PART					24 PART				
4293	GM4211D	GM4212D	GM4214D	GM4215D	GM4216D	GM4219D	GM4221D	GM4222D	GM4224D	GM4226D	GM4228D	GM4229D	GM4231D	GM4232D
4318	GM4311D	GM4312D	GM4314D	GM4315D	GM4316D	GM4319D	GM4321D	GM4322D	GM4324D	GM4326D	GM4328D	GM4329D	GM4331D	GM4332D
4445	GM4411D	GM4412D	GM4414D	GM4415D	GM4416D	GM4419D	GM4421D	GM4422D	GM4424D	GM4426D	GM4428D	GM4429D	GM4941D	GM4432D
4597	GM4511D	GM4512D	GM4514D	GM4515D	GM4516D	GM4519D	GM4521D	GM4522D	GM4524D	GM4526D	GM4528D	GM4529D	GM4531D	GM4532D
4750	GM4711D	GM4712D	GM4714D	GM4715D	GM4716D	GM4719D	GM4721D	GM4722D	GM4724D	GM4726D	GM4728D	GM4729D	GM4731D	GM4732D
4902	GM4911D	GM4912D	GM4914D	GM4915D	GM4916D	GM4919D	GM4921D	GM4922D	GM4924D	GM4926D	GM4928D	GM4929D	GM4931D	GM4932D
5055	GM5011D	GM5012D	GM5014D	GM5015D	GM5016D	GM5019D	GM5021D	GM5022D	GM5024D	GM5026D	GM5028D	GM5029D	GM5031D	GM5032D
5207	GM5211D	GM5212D	GM5214D	GM5215D	GM5216D	GM5219D	GM5221D	GM5222D	GM5224D	GM5226D	GM5228D	GM5229D	GM5231D	GM5232D

GM304C: Rectangular Concrete Infilled Cover & Frame (Multi-Parts) CLASS E





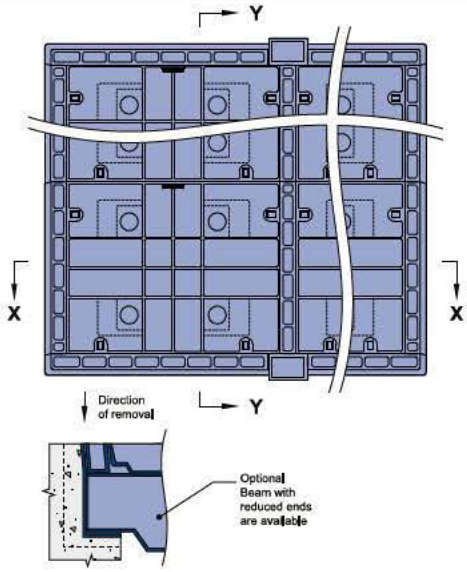
SECTION X-X

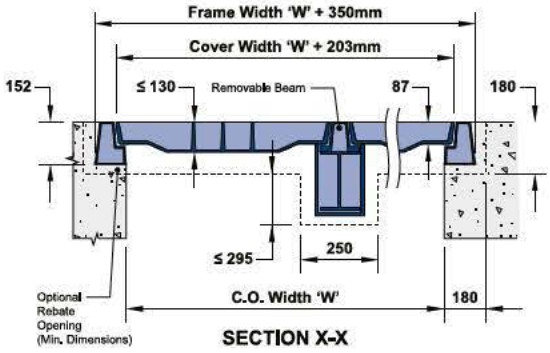


SECTION Y-Y

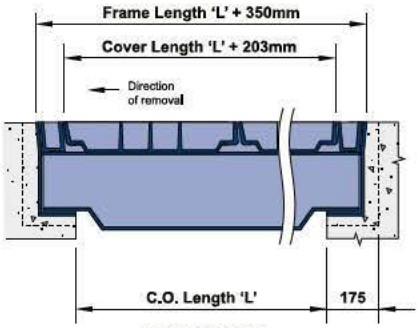
NOTE:
- Clear opening Width 'W' is taken at right angles to the removable beams.
- Clear Opening Length 'L' is taken as parallel with removable beams.
- GATIC frame can be installed as a two part process by first casting a rebate according to recommended rebate sizes and then casting the frame into the rebate. Alternatively, the most cost effective methos id to cast the frame in when pouring the pit walls.
- The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office. GATIC reserves the right to change product specifications shown without prior notice.

GM304C: Rectangular Concrete Infilled Cover & Frame (Multi-Parts) CLASS G





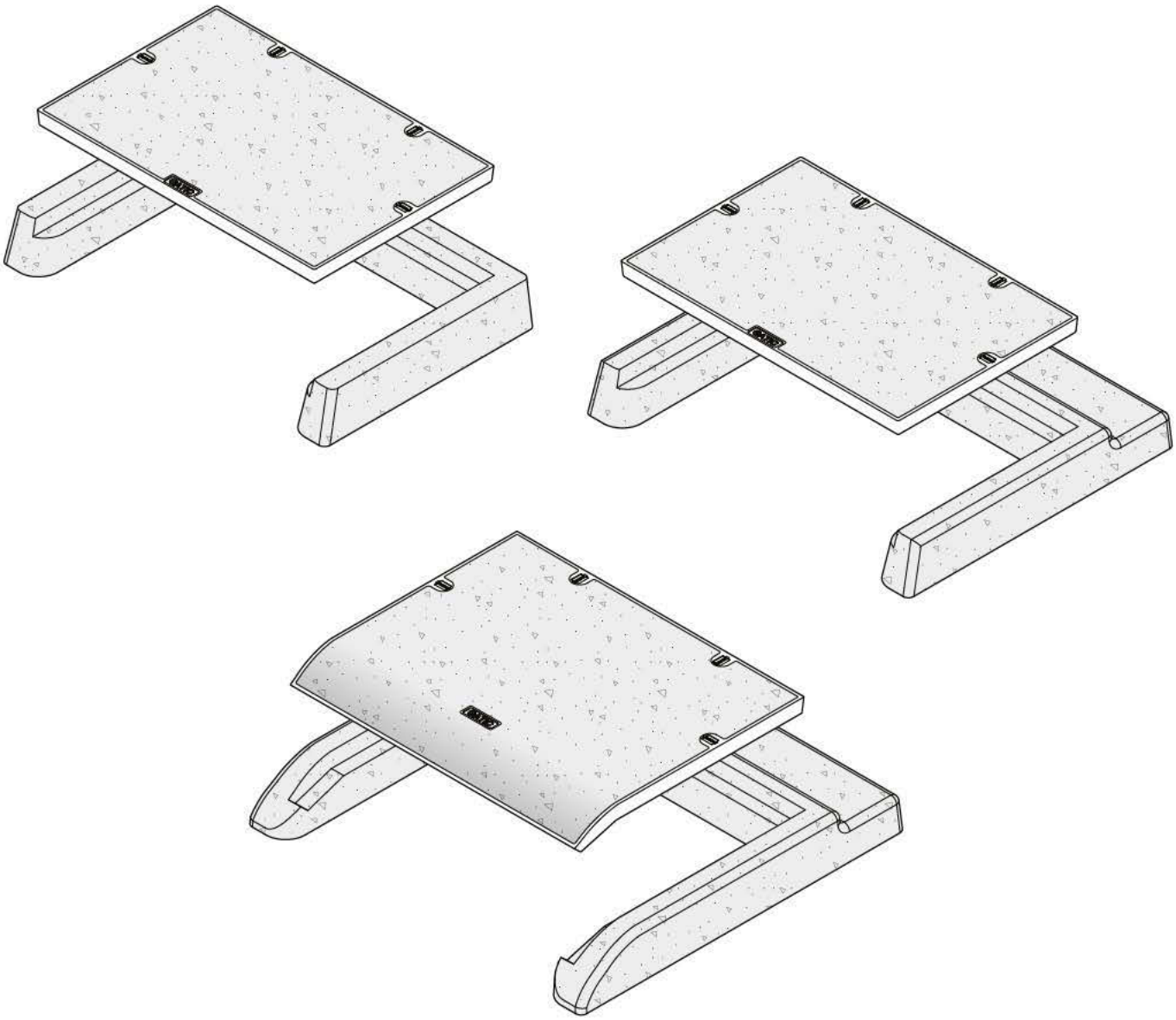
SECTION X-X



SECTION Y-Y

NOTE:
- Clear opening Width 'W' is taken at right angles to the removable beams.
- Clear Opening Length 'L' is taken as parallel with removable beams.
- GATIC frame can be installed as a two part process by first casting a rebate according to recommended rebate sizes and then casting the frame into the rebate. Alternatively, the most cost effective methos id to cast the frame in when pouring the pit walls.
- The illustrations shown are intended to serve as a guide only. Detailed drawings and specifications can be obtained by contacting the nearest GATIC office. GATIC reserves the right to change product specifications shown without prior notice.

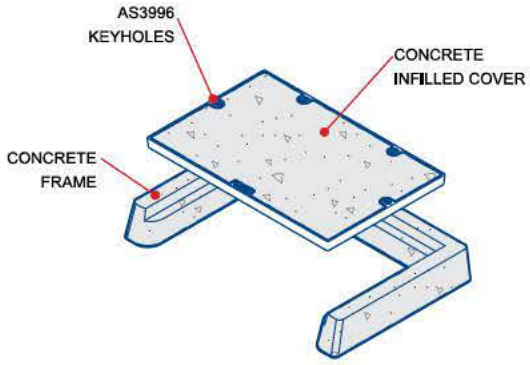
C.O. Width 'W' (mm)	C.O. Length 'L' (mm)											
	990	1145	1295	1524	1676	1830	1980	2057	2210	2362	2515	2667
	4 PART											
1054	GM1099G	GM1011G	GM1012G	GM1015G	GM1016G	GM1018G	GM1019G	GM1020G	GM1022G	GM1023G	GM1025G	GM1026G
1206	GM1299G	GM1211G	GM1212G	GM1215G	GM1216G	GM1218G	GM1219G	GM1220G	GM1222G	GM1223G	GM1225G	GM1226G
1358	GM1399G	GM1311G	GM1312G	GM1315G	GM1316G	GM1318G	GM1319G	GM1320G	GM1322G	GM1323G	GM1325G	GM1326G
1511	-	-	GM1512G	-	-	-	GM1519G	-	-	-	-	GM1526G
1664	-	-	GM1612G	-	-	-	GM1619G	-	-	-	-	GM1626G
	6 PART											
1956	GM1999G	GM1911G	GM1912G	GM1915G	GM1916G	GM1918G	GM1919G	GM1920G	GM1922G	GM1923G	GM1925G	GM1926G
2108	GM2199G	GM2111G	GM2112G	GM2115G	GM2116G	GM2118G	GM2119G	GM2120G	GM2122G	GM2123G	GM2125G	GM2126G
2261	-	-	GM2212G	-	-	-	GM2219G	-	-	-	-	GM2226G
2413	-	-	GM2412G	-	-	-	GM2419G	-	-	-	-	GM2426G
2565	-	-	GM2512G	-	-	-	GM2519G	-	-	-	-	GM2526G
	8 PART											
2857	GM2899G	GM2811G	GM2812G	GM2815G	GM2816G	GM2818G	GM2819G	GM2820G	GM2822G	GM2823G	GM2825G	GM2826G
3010	-	-	GM3012G	-	-	-	GM3019G	-	-	-	-	GM3026G
3162	-	-	GM3112G	-	-	-	GM3119G	-	-	-	-	GM3126G
3315	-	-	GM3312G	-	-	-	GM3319G	-	-	-	-	GM3326G
3467	-	-	GM3412G	-	-	-	GM3419G	-	-	-	-	GM3426G
	10 PART											
3607	GM3699G	GM3611G	GM3612G	GM3615G	GM3616G	GM3618G	GM3619G	GM3620G	GM3622G	GM3623G	GM3625G	GM3626G
3759	-	-	GM3712G	-	-	-	GM3719G	-	-	-	-	GM3726G
3912	-	-	GM3912G	-	-	-	GM3919G	-	-	-	-	GM3926G
4064	-	-	GM4012G	-	-	-	GM4019G	-	-	-	-	GM4026G



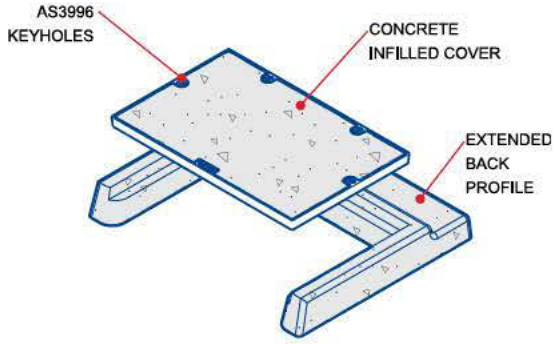
APPLICATIONS

Side entry covers are designed for use on road drainage side entry pits. A range of types is available to suit different traffic conditions and hydraulic requirements. Front profile of side entry covers suits most kerb designs.

PRODUCT CODE SPECIFICATION



311C - Side Entry Standard Profile Units



312C - Side Entry Extended Back Units

Strength and Durability

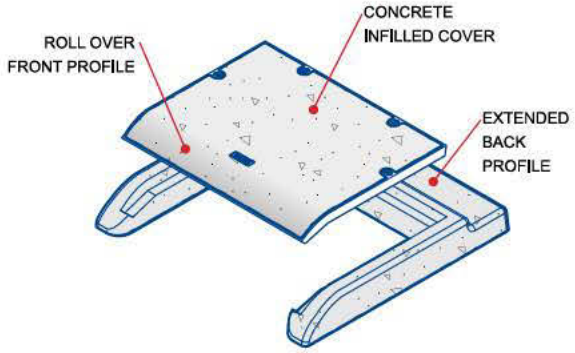
- Made from ductile Iron 500-7 to AS1831 standard for superior strength to weight ratio.
- Concrete Infilled units are filled with structural grade concrete to AS3996 standard.

Easy, Safe Operation

- Lifting keyholes are designed to suit GATIC's range of lifting keys and devices.
- Keyholes designed to ensure that keys cannot rotate and disengage accidentally.
- Plastic plugs are fitted to exclude ingress and dirt.

Cover to Frame Matching and Orientation

- Covers and frames are manufactured in accurate matching assemblies. The cover of one unit will not necessarily fit the frame of another assembled unit.
- A cover seats properly in its frame in one orientation only.



313C - Side Entry Roll Over Profile Units

Economical Design

- Prefilled ribbed cover design gives maximum strength for minimum weight of material.
- GATICs range of side entry covers give a choice of surround contour to suit most kerb profile designs.

PRODUCT CODE SPECIFICATION

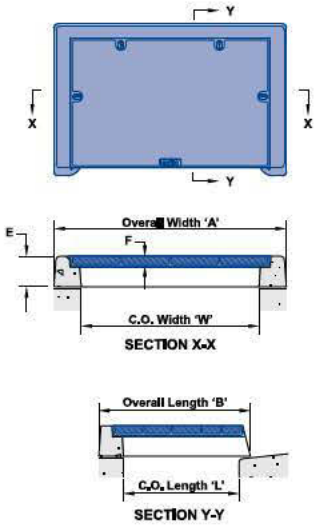
311C96

C.O. LENGTH *610mm*

C.O. WIDTH *914mm*

PRODUCT TYPE *311C - CAST IRON SIDE ENTRY CONCRETE INFILLED (STANDARD PROFILE)*
312C - CAST IRON SIDE ENTRY CONCRETE INFILLED (EXTENDED BACK PROFILE)
313C - CAST IRON SIDE ENTRY CONCRETE INFILLED (ROLL OVER PROFILE)

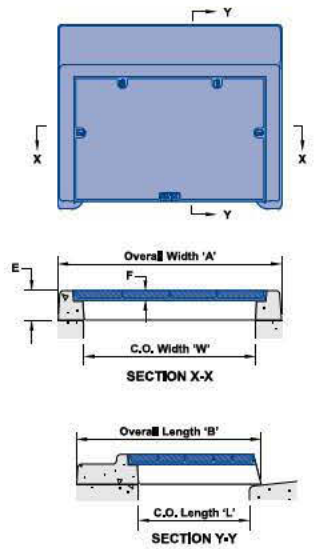
311C: Cover Side Entry Concrete Encased



GM311C96BCF	COVER CODE
GM311C96BF	FAME CODE

Clear Opening (mm) W x L	AS 3996 Class Rating	Overall Dimension (mm) A	B	E	F
914 x 610	B	1168	750	152	50

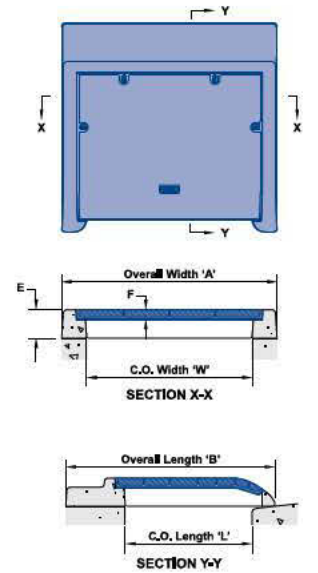
312C: Cover Side Entry Extended Back Concrete Encased



GM312C96BF	COVER CODE
GM311C96BCF	FAME CODE

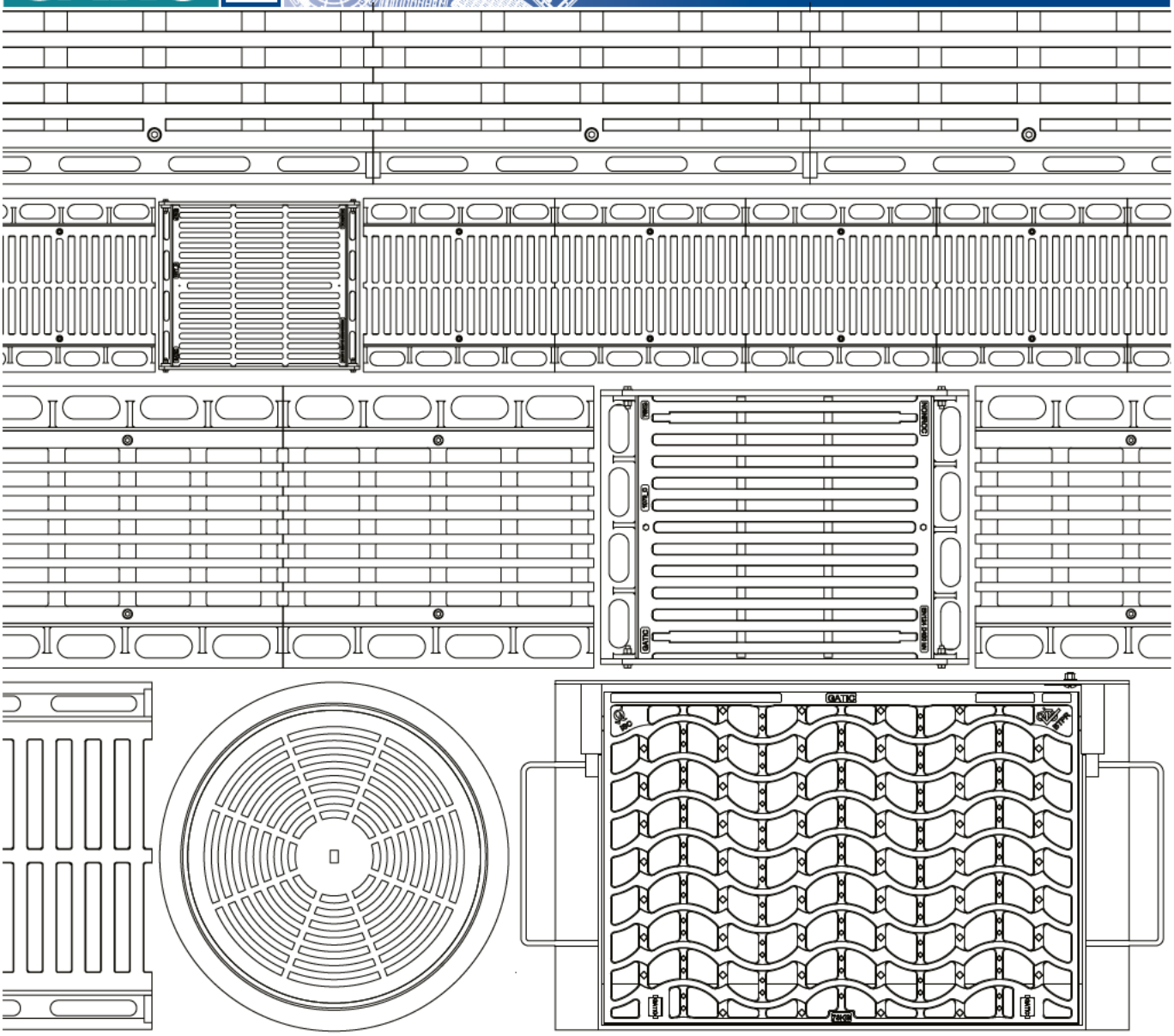
Clear Opening (mm) W x L	AS 3996 Class Rating	Overall Dimension (mm) A	B	E	F
914 x 610	B	1168	941	152	50

313C: Cover Side Entry Roll Over Concrete Encased



GMM227ELL	COVER CODE
GMM227ELF	FAME CODE

Clear Opening (mm) W x L	AS 3996 Class Rating	Overall Dimension (mm) A	B	E	F
914 x 750	B	1168	1154	152	50



APPLICATIONS

Trench gratings are designed for use in areas where:

- Single grated pits are unsuitable;
- The water flow exceeds the capacity of a single pit;
- The allowable water depth over a surface must be limited;
- Surface water must be intercepted without introducing a change of grade or depression in the surface;
- It is necessary to maintain a horizontal grade in one direction;

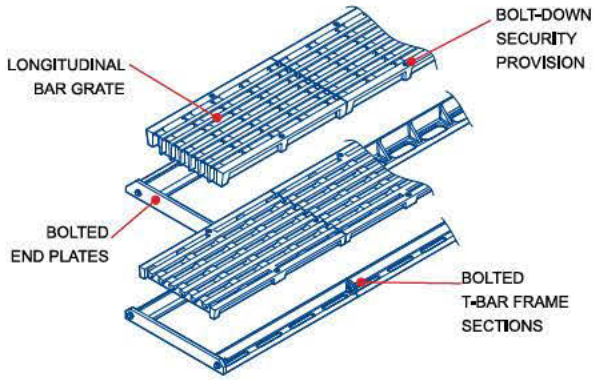
Trench grating runs can be designed and made to suit trenches ranging from:

- Single straight runs of constant width and unrestricted length;
- Complex systems of runs having junctions, cross-overs, bends and other changes in direction and trench width;

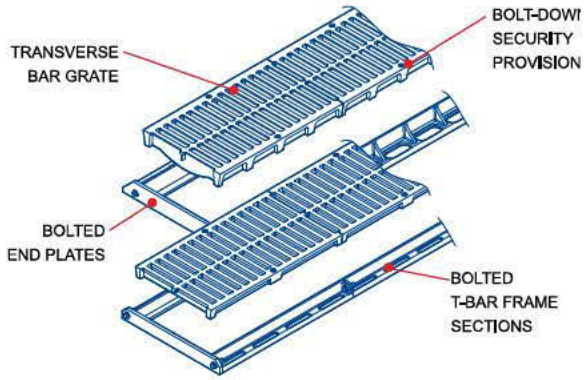
Typical applications are for:

- Factory floors where processes involve water or other fluids;
- Road crossings where complete water catchment is required;
- Wharf areas, airport aprons and taxiways;
- Areas used by forklift trucks where shallow spoon drains or dished inverts are unacceptable;
- Basements protected by fire sprinkler systems where flooding would create a problem;
- At the junctions between footpaths and paved areas such as service stations and city squares;
- Across large doorways to prevent the ingress of water;
- Swimming pool surrounds.

STANDARD TRENCH GRATE FEATURES



321L - LONGITUDINAL TRENCH GRATING



321T - TRANSVERSE TRENCH GRATING

Main Design Features

- Modular design - runs are built from a range of standard grates and bolted frame sections to suit any required length.
- Bar patterns - the grate bars and slots of the transverse grate pattern run at right angles to the length of the trench runs; the grate bars and slots of the longitudinal grate pattern run parallel with the length of the trench run.
- Unresticted trench access - grates can be removed individually for partial or complete access to the trench.

Hydraulic Efficiency

- Grate openings have been designed to prevent the ingress of large harmful debris whilst allowing smaller unobjectionable material to pass through without clogging the grate.

Strength and Durability

- Made from ductile Iron Grade 500-7 to AS1831 standard for superior strength to weight ratio.

Stability Under Load

- Frame bar design ensures stable, permanent keying of frame in surrounding concrete.

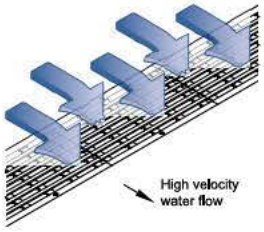
Economical Design and Choice of Loading Capacities

- GATICs range of grates give a choice of load capacities to enable accurate selection to closely suit particular loading requirements, providing cost effective design solutions.

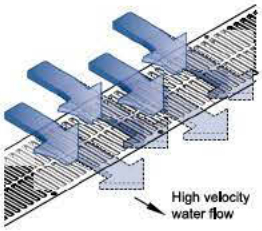
CHOICE OF BAR PATTERNS

While the majority of the GATIC trench grating range has a transverse bar pattern, a limited range of grating with longitudinal bar pattern is available. The longitudinal bar pattern has an advantage over the transverse bar pattern in certain applications and is recommended where:

- A longitudinal bar pattern gives improved appearance;
- Trench grating is installed in confined areas subject to high lateral wheel loads of tightly manoeuvring forklifts trucks;
- Trench grating is installed in steeply sloping areas and complete interception of water flow is required;



Longitudinal Bar:
Complete water interception



Transverse Bar:
Partial water interception

PRODUCT CODE SPECIFICATION

321L3061D

- **CLASS RATING** *AS3996*
- **C.O. LENGTH** *610mm*
- **C.O. WIDTH** *305mm*
- **PRODUCT TYPE** *321L - CAST IRON TRENCH GRATE (LONGITUDINAL BAR)*
  321T - CAST IRON TRENCH GRATE (TRANSVERSE BAR)

MODIFICATION OPTIONS

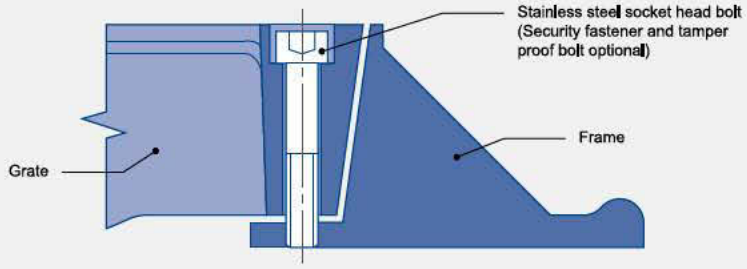
Increased Versatility For Standard Units
The range of modifications available has been designed to give standard GATIC units the ability to meet special needs of appearance, security, identification, operation and other functional requirements. GATIC is comitted to meet your standard and non-standard modification/option requirements, contact our Sales office for further inquiries.

Available Modifications:
Units can be modified to incorporate:

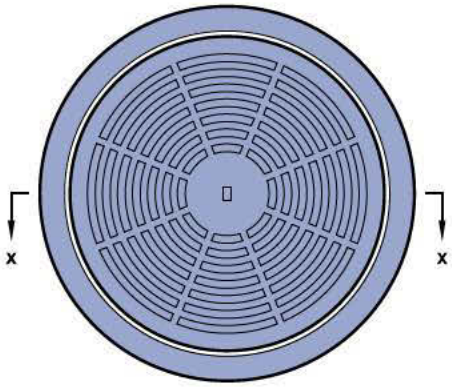
- Holding-down Bolts and Locks for security.

SECURITY BOLT-DOWN

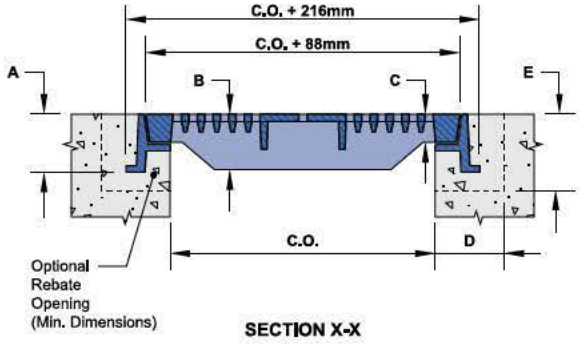
- Security bolt-down are designed to withstand in-service loading applicable to the location of the installation
- Non corrosive fasteners
- Bolt provision can be stainless steel, security bolt or tamper proof fasteners
- Specifying bolt-down option:
  Standard configuration
  CLASS B + D 2 x 10mm S/S Bolt
  CLASS G 2 x 12mm S/S Bolt



320G: Grate Circular

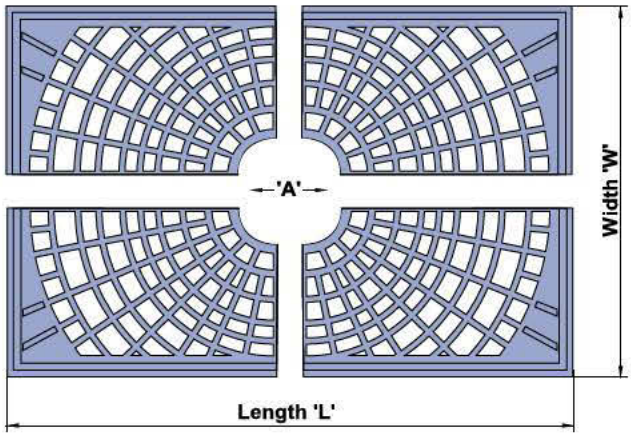


Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)			
		D		A	B	E	F
GM320G6D		610	D	698	826	102	117



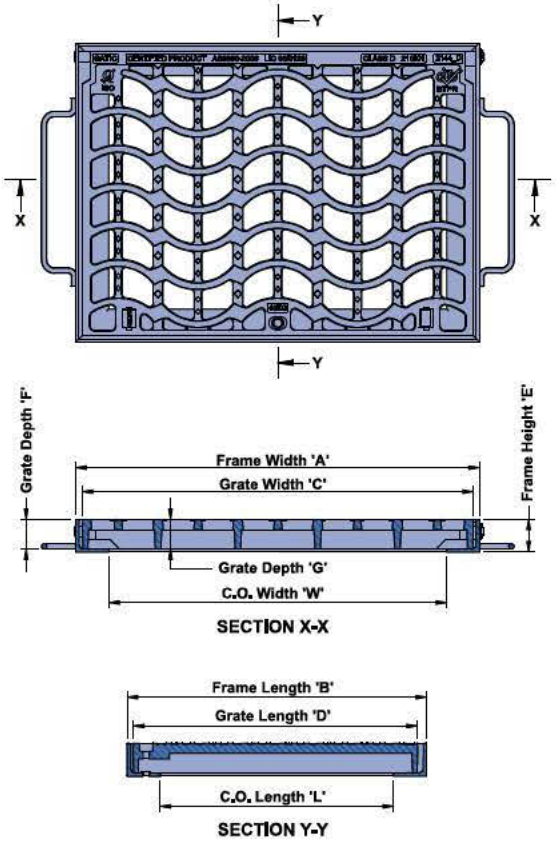
SECTION X-X

321E: Tree Grate Rectangular



Code	Old Code	Types	Dimensions (mm)	Functional Dimension (mm) Break out options				
			W x L	A	A1	A2	A3	F
GM321E1212N	856 + 857	1+2	1200 x 1200	381	495	610	724	30
GM321E8787N	854	3	874 x 874	381	NA	NA	NA	44
GM321E1414N	855	4	1489 x 1489	381	495	610	724	44
GM321E9114N	858	5	914 x 1467	381	495	610	724	44

321G: Smart Grate - Gully Grate

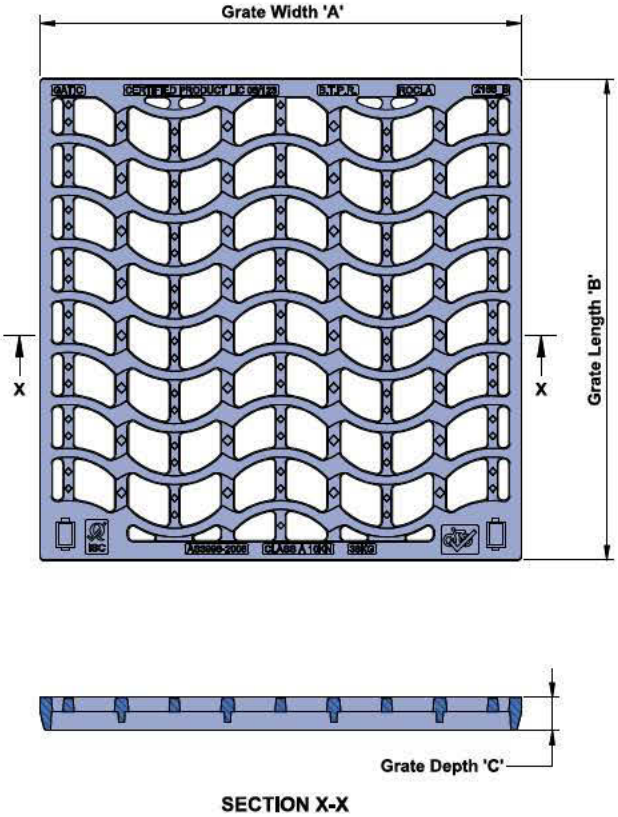


Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)						
	W x L		A	B	C	D	E	F	G
GM325G95D	930 x 580	D	1110	676	918	642	90	80	105
GM321G64D	650 x 450	D	656	573	527	537	63	57	57

NOTE: Bike safe in all directions

BTPR

321P: Drop-In Grate - Smart Grate

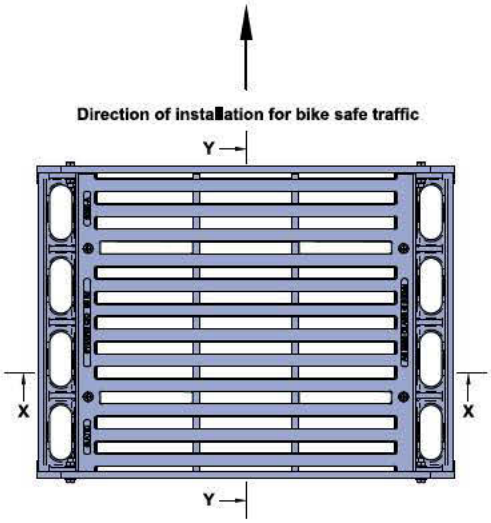


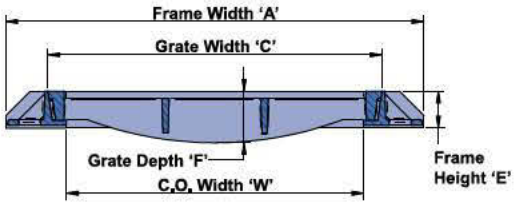
Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)		
			A	B	C
GM321P44H	450 x 450	B	522	522	46
GM321P66H	600 x 600	B	672	672	46
GM321P94H	900 x 450	B	1002	500	46
GM321P96H	900 x 600	B	1002	702	46
GM321P44L	450 x 450	A	522	522	46
GM321P66L	600 x 600	A	672	672	46
GM321P94L	900 x 450	A	1002	500	46
GM321P96L	900 x 600	A	1002	702	46

NOTE: Bike safe in all directions

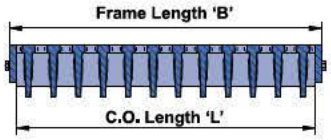
BTPR

321S: Sump Grate





SECTION X-X

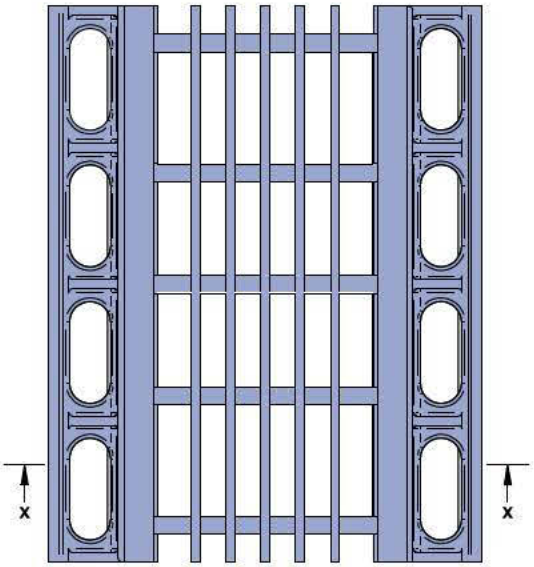


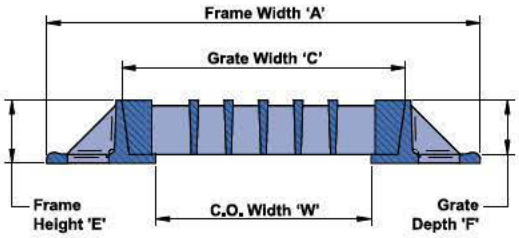
SECTION Y-Y

Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)				
		W x L		A	B	C	E	F
GM321S3030B	L539	305 x 305	B	455	325	353	48	37
GM321S3061B	L540	305 x 610	B	455	630	353	48	37
GM321S4545B	L541-2	457 x 457	B	607	477	505	48	49
GM321S4561B	L541-2	457 x 610	B	607	630	505	48	49
GM321S6161B	L543	610 x 610	B	760	630	658	48	49
GM321S6191B	L544	610 x 914	B	760	934	658	48	49
GM321S6112B		610 x 1219	B	760	1239	658	48	49
GM321S6118B		610 x 1829	B	760	1849	658	48	49
GM321S3030D	H549	305 x 305	D	529	325	381	69	59
GM321S3061D	L550	305 x 610	D	529	630	381	69	59
GM321S4545D	H551-1	457 x 457	D	681	477	533	69	73
GM321S4561D	H551	457 x 610	D	681	630	533	69	73
GM321S6161D	H553	610 x 610	D	834	630	686	69	105
GM321S6191D	H554	610 x 914	D	834	934	686	69	110
GM321S6112D	H555	610 x 1219	D	834	1239	686	69	110
GM321S6118D		610 x 1829	D	834	1849	686	69	110
GM321S7661D	H557	762 x 610	D	986	630	838	69	110
GM321S7612D	H558	762 x 1219	D	986	1239	838	69	110
GM321S9130D		914 x 305	D	1138	325	990	69	112
GM321S9145D	H560	914 x 457	D	1138	477	990	69	122
GM321S9161D	H561	914 x 610	D	1138	630	990	69	122
GM321S9191D	H562	914 x 914	D	1138	934	990	69	122

321L: Trench Grate (Longitudinal)

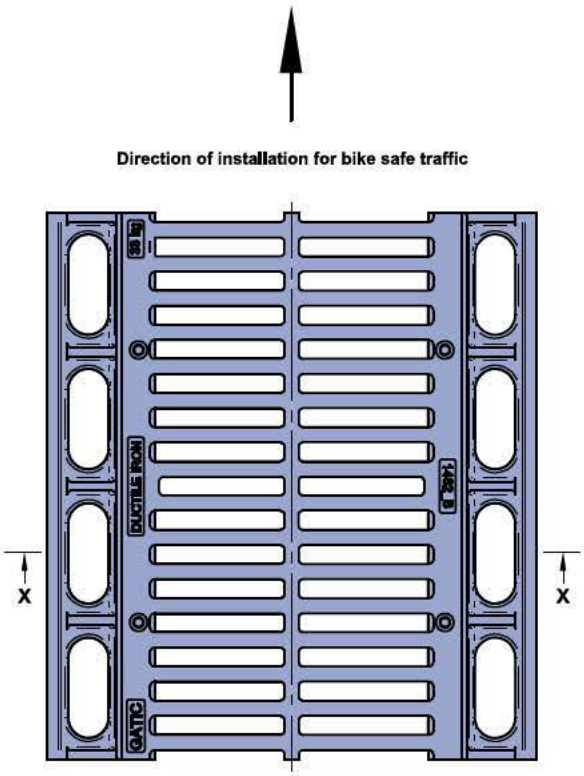
Direction of installation for bike safe traffic

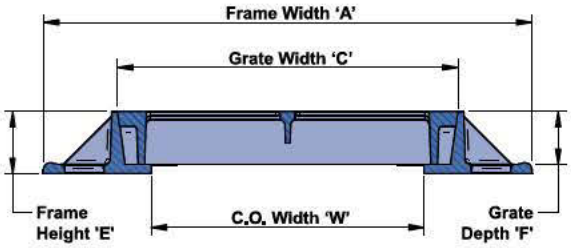




SECTION X-X

321T: Trench Grate (Transverse)

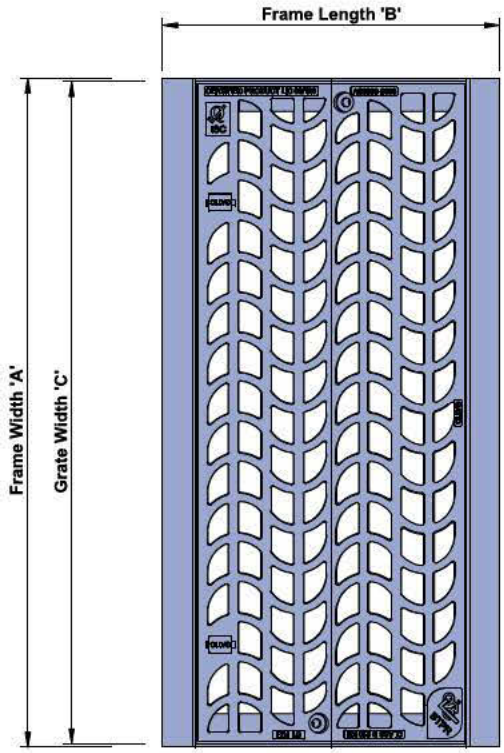


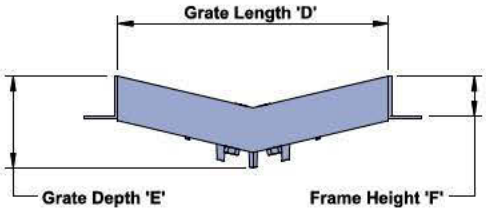


SECTION X-X

Code	Old Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)				Grates & Frame Std
		W		A	C	E	F	Unit Length
GM321T1061B	L610	102	B	252	150	48	37	610
GM321T1012B		102	B	252	150	48	37	1220
GM321T1561B	L611	152	B	302	200	48	37	610
GM321T1561D	HC620-1	152	D	376	228	69	48	610
GM321T1512B		152	B	302	200	48	37	1220
GM321T1512D	HC620-2	152	D	376	228	69	48	1220
GM321T2261B	L612	229	B	379	277	48	37	610
GM321T2261D	HC621-1	229	D	453	305	69	52	610
GM321T2212B		229	B	379	277	48	37	1220
GM321T2212D	HC621-2	229	D	453	305	69	52	1220
GM321T3061B	L613	305	B	455	353	48	37	610
GM321T3061D	HC622-1	305	D	529	381	69	59	610
GM321T3012B		305	B	455	353	48	37	1220
GM321T3012D	HC622-2	305	D	529	381	69	59	1220
GM321T4561B	L615	457	B	607	505	48	49	610
GM321T4512B		457	B	607	505	48	49	1220
GM321T4561D	HC624-1	457	D	771	623	69	73	610
GM321T4512D	HC624-2	457	D	771	623	69	73	1220
GM321T6161B	L616	610	B	760	658	48	51	610
GM321T6161D	HC625-1	610	D	834	686	69	110	610
GM321T6112B		610	B	760	658	48	51	1220
GM321T6112D	HC625-2	610	D	834	686	69	110	1220
GM321T7661D	HC626	762	D	986	838	69	110	610
GM321T7612D	HC626-2	762	D	986	838	69	110	1220
GM321T9161D	HC627-1	914	D	1138	990	69	122	610
GM321T9112D	HC627-2	914	D	1138	990	69	122	1220
GM321T3012G		305	G	545	380	69	59	610
GM321T3061G		305	G	545	380	69	59	610

321V: V Grate



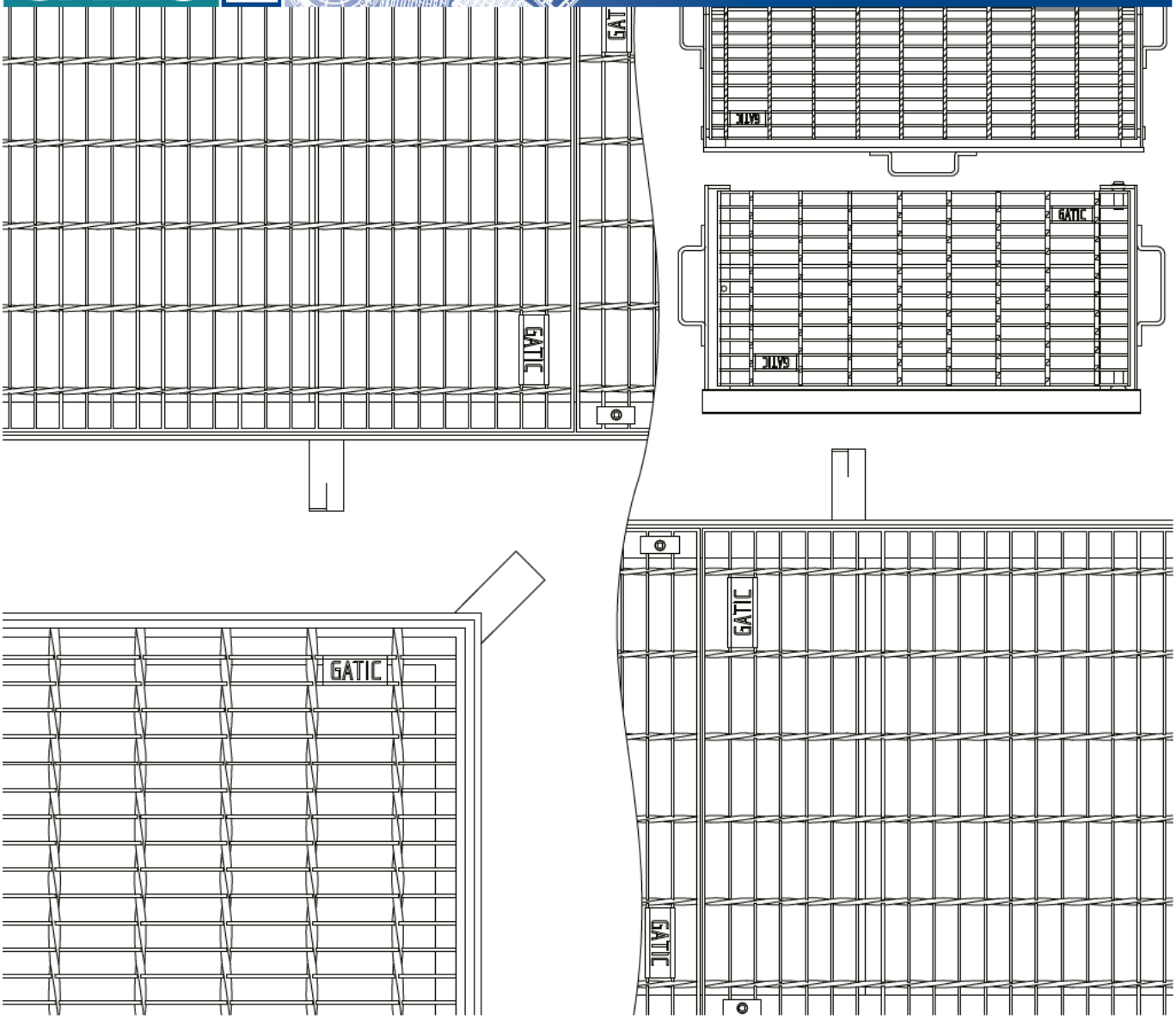


Code	Clear Opening (mm)	AS 3996 Class Rating	Functional Dimension (mm)					
	W x L		A	B	C	D	E	F
GM321V94D	900 x 450	D	1000	504	990	404	137	60

NOTE:

Bike safe in **all** directions

BTPR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APPLICATIONS

GATIC's range of Galvanised Mild Steel (GMS) grating is used in a wide variety of industrial and commercial applications. Cost savings, improved appearance, strength, durability and extensive product range are some of the features which make GATIC GMS Grates the standout choice.

GMS Sump Grate typical applications include:

- Car parks
- Quadrangles
- Storage yards
- Plazas, gardens
- Wash room facilities

GMS Trench Grate typical applications include:

- Factory floors where processes involve water or other fluids
- Basements protected by fire sprinkle systems where flooding would create a problem
- Across doorways to prevent the ingress of water

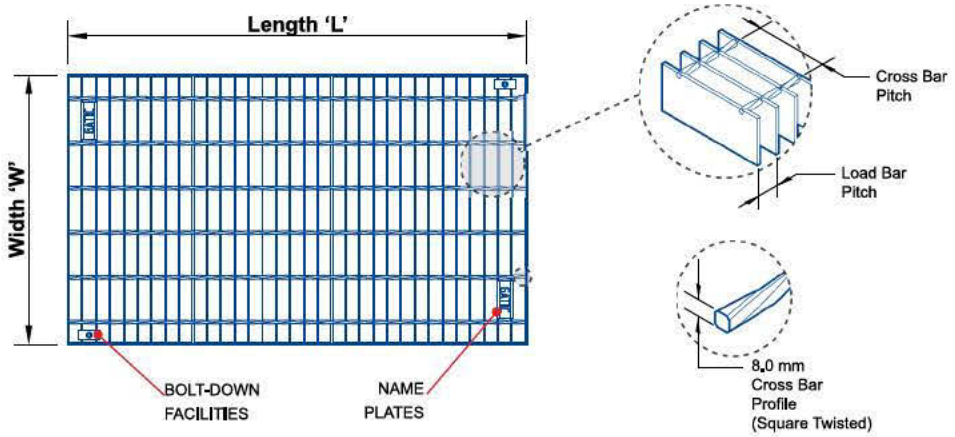
GMS Gully Grate typical applications include:

- Road drainage

GMS V-Gully Grate typical applications include:

- Road Drainage

STANDARD GMS GRATE UNIT FEATURES



Typical GMS Grate Unit

GMS Grating Terminology:

Load Bar: Load carrying bar across the grating span.

Cross Bar: Connecting bar of square twisted profile which runs perpendicular to the Load Bar.

Length Dimension: The overall dimension measured perpendicular to the Load Bar.

Width Dimension: The overall dimension measured parallel to the Load Bar.

Pitch Spacing: A center to center distance between two adjacent bars.

Steel Bar Gratings

- Light weight
- High Strength
- Durable
- Safety, slip resistant surfaces
- Design flexibility
- CLEAR OPENING
  - Ventilation and light can pass through
  - Self cleaning
  - Enhances drainage

Durable and Slip Resistant Surfaces

- All GMS grate units are hot dipped galvanised to AS/NZS 4680.
- GATIC's range of gratings exhibit slip resistant abilities in every direction, maximising safe working surfaces.

High Strength and Light Weight

- GATIC's gratings are strong and light weight, consisting of a latticework of bearing bars and cross bars welded in a fixed configuration.

Design Flexibility

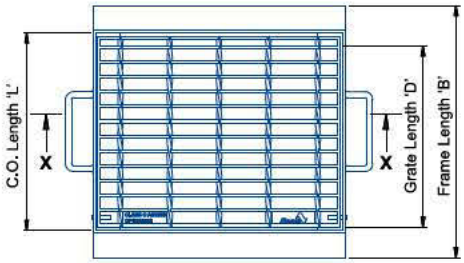
- Gratings can be pre-cut to the customers specification.
- Excellent fit facilitates easy removal of grating.

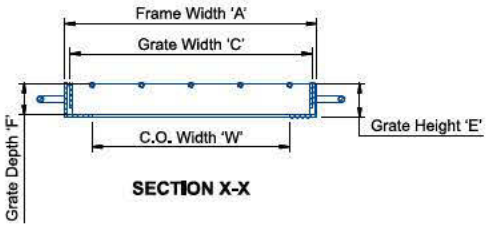
PRODUCT CODE SPECIFICATION

331S66L2

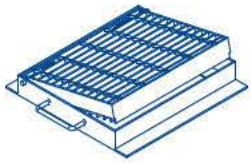
- **2** - *Grate & Frame*
  3 - Hinged Grate & Frame
- **LOAD RATING**
- **C.O. LENGTH** *600mm*
- **C.O. WIDTH** *600mm*
- **PRODUCT TYPE** *331S - GMS SUMP GRATE UNITS*
  331T - GMS TRENCH GRATE UNIT
  331G - GMS GULLY GRATE UNITS
  331V - GMS GULLY V-GRATE UNIT

331S: Sump Grate (Gal Mild Steel)

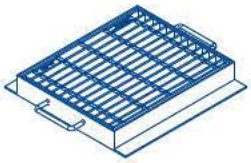




SECTION X-X



Grate & Frame (Hinged)

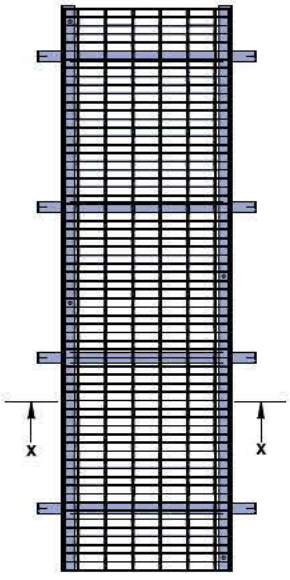


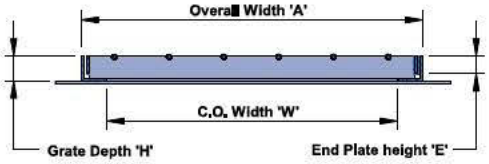
Grate & Frame (Hingeless)

Code	Class	Clear Opening (mm)	Functional Dimension (mm)					
		W x L	A	B	C	D	E	F
GM331S33L	A	300 x 300	350	350	330	275	25	20
GM331S33H	B	300 x 300	380	380	360	275	40	32
GM331S44L	A	450 x 450	500	495	480	425	25	20
GM331S44H	B	450 x 450	540	535	535	455	45	40
GM331S66L	A	600 x 600	660	660	640	575	30	25
GM331S66H	B	600 x 600	700	700	680	575	50	45
GM331S66X	D	600 x 600	700	700	680	575	80	75
GM331S69L	A	600 x 900	660	960	640	875	30	25
GM331S69H	B	600 x 900	700	1000	680	875	50	45
GM331S69X	C	600 x 900	700	1015	680	875	80	75
GM331S94H	B	900 x 400	1035	540	965	425	75	65
GM331S99L	A	900 x 900	980	980	960	875	40	32
GM331S99H	B	900 x 900	1010	1010	990	875	55	50
GM331S99X	C	900 x 900	1015	1015	995	875	80	75
GM331S17H	C	1000 x 750	1100	850	1080	727	80	75

* LOAD TESTED TO AS3996

331T: Trench Grate (Gal Mild Steel)



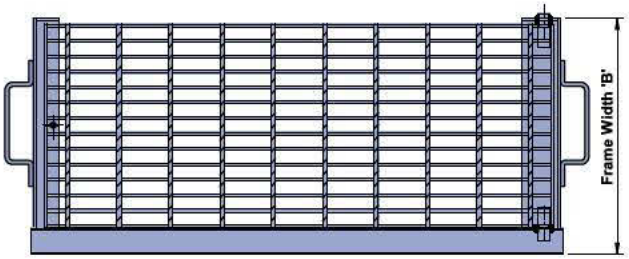


SECTION X-X

Code	Class	Clear Opening (mm)	Functional Dimension (mm)		
		W	A	E	F
GM331T11H	B	110	160	25	20
GM331T15L	A	150	205	25	20
GM331T15H	B	150	230	40	32
GM331T20L	A	200	250	25	20
GM331T20H	B	200	280	40	32
GM331T25L	A	250	300	25	20
GM331T25H	B	250	330	40	32
GM331T30L	A	300	360	30	25
GM331T30H	B	300	390	45	40
GM331T35L	A	350	410	30	25
GM331T35H	B	350	440	45	40
GM331T40L	A	400	480	40	32
GM331T40H	B	400	510	55	50
GM331T50L	A	500	580	40	32
GM331T50H	B	500	610	55	50
GM331T50X	D	500	632	75	75

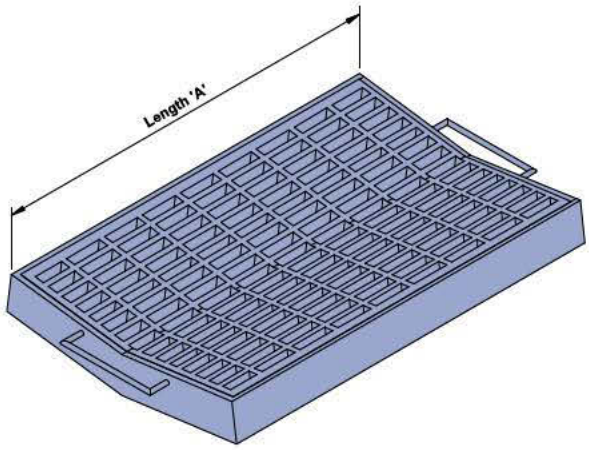
* LOAD TESTED TO AS3996

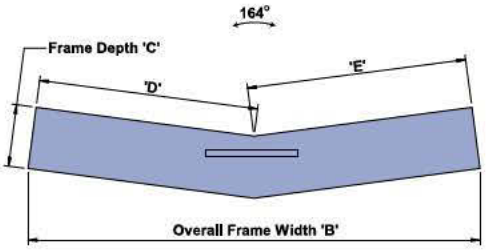
331G: Gully Grate (side entry / kerb)



Code	Old Code	Clear Opening (mm)	Type L : Light H : Heavy X : Extra Heavy	Overall Frame Dimension (mm)		
		W x L		A	B	C
GM331G74HSE		750 x 400	H	860	455	75
GM331G94HSE	HSG9045-T	900 x 400	H	1025	450	75
GM331G94HSEF		900 x 400	H	1025	450	75

331V: Gully Grate (Road Vee Type)





Code	Old Code	Clear Opening (mm)	Type L : Light H : Heavy X : Extra Heavy	Overall Frame Dimension (mm)				
		W x L		A	B	C	D	E
GM331V66H	SG60/60V	600 x 600	H	710	620	75	303	303
GM331V95H	WG20	900 x 500	H	1020	641	75	267	316
GM331V96H	WG12	900 x 600	H	1035	620	75	300	300
GM331V98H		900 x 800	H	1005	930	75	465	465

INSTALLATION GUIDELINES

Note:

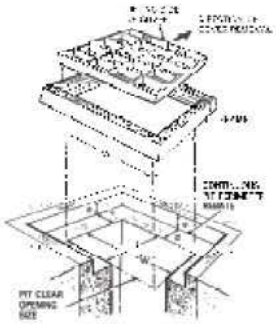
The following information is provided to give guidance only. As all installations are not identical, please contact your GATIC representative for additional information, if required.

GENERAL GUIDELINES

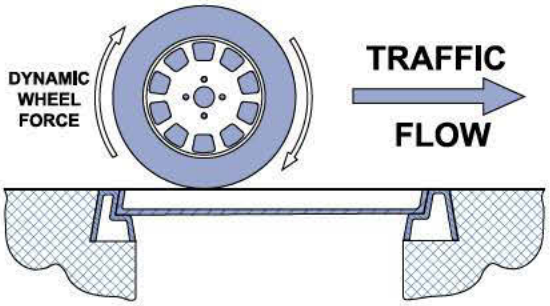
Correct installation is essential for a GATIC unit to operate satisfactorily and give a long service life for which it has been designed.

Incorrect methods of installation may cause:

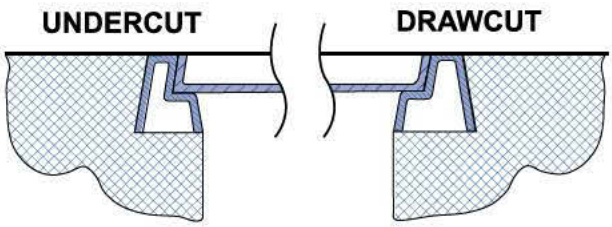
- Movement or rocking under load;
- Excessive wear and reduced life;
- Damage and/or failure under load;
- Poor sealing between cover and frame seatings.



SQUARE COVER INSTALLATION NOTES



To prevent covers lifting, position covers such that traffic flow direction is from undercut to drawcut.



GENERAL REQUIREMENTS

Forming of Pit or Slab Openings

The guidelines for installation outlined are for installing GATIC units in rebates formed in pit or floor slab openings.

As an alternative, units can be supplied with frames bolted to covers for installation directly into pit or floor openings during the actual forming of the pit or floor opening (contact your nearest Gatic office for details).

Cover to Frame Matching

Gatic covers and frames are mated individually during the machine process and are, therefore, not always interchangeable. A cover from one frame will not necessarily fit another frame. Covers in multiple units are marked and designated individually to particular locations in the frame.

Cover Orientation

The direction in which a cover can be slid out of its frames is indicated by the position of the cover edge with two or four keyholes. If a wall or other obstacle abuts the opening, ensure that the cover is installed so that the direction of removal is parallel to or away from the obstacle.

Concrete Infill and Curing

With the exception of solid top covers, all covers and frames must be filled with structural grade concrete (refer to AS3996 for additional information) This is essential if the full strength potential of these covers is to be realized. Concrete infill must be poured and allowed to cure with covers installed in frames.

Careful Handling Essential

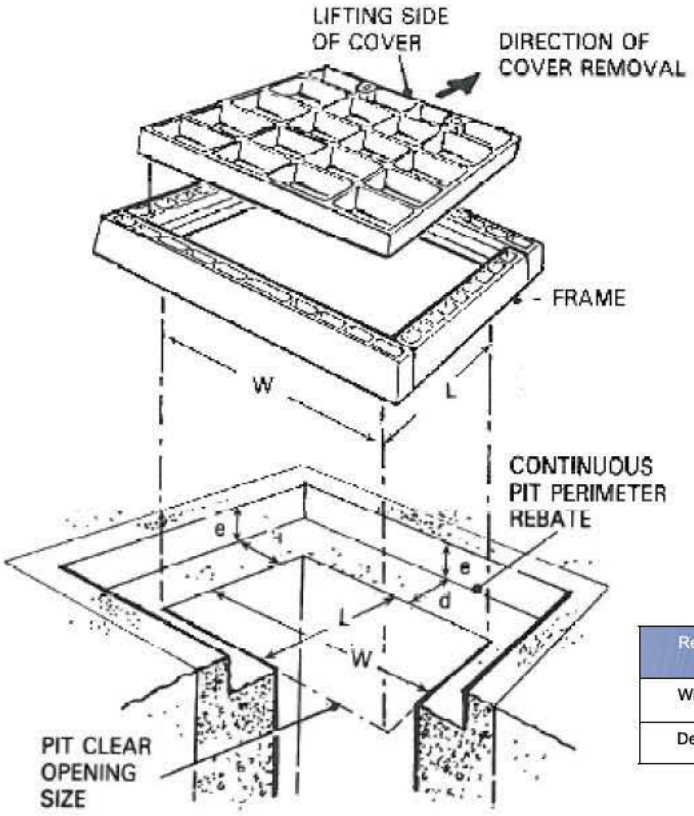
Frames may suffer twisting and damage to joints if subjected to shocks or heavy blows.

Cover to Frame Sealing

The application of GATIC MANHOLE SEALING COMPOUND is recommended for all cover to frame seatings. Lubricating greases are not recommended as they melt, dry out and cause deterioration of seating surfaces.

4LT Tin – Product Code GM37504
20LT Tin – Product Code GM37520

STANDARD UNIT AND REBATE SIZES



Standard Sizes (Frame Opening) W x L (mm)
457 X 305
457 X 457
457 X 610
762 X 610
762 X 762
914 X 610
914 X 914

Rebate Sizes	Class A & B Light Duty	Class C & D Medium Duty	Class E, F & G Heavy & Extra Heavy Duty
Width d (mm)	100	180	180
Depth e (mm)	75	110	180

PART 1 – ONE PART SQUARE OR RECTANGULAR UNITS

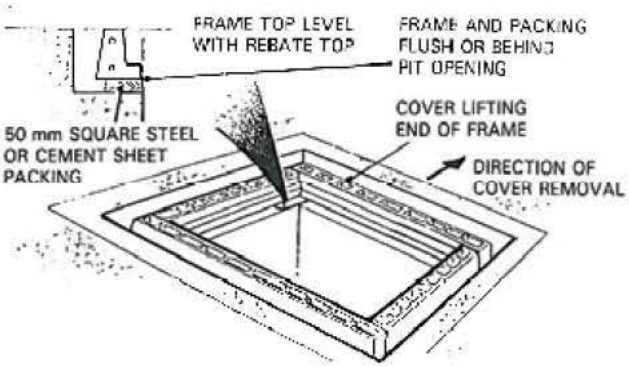
STEP 1 – FORM A REBATE IN THE PIT OPENING

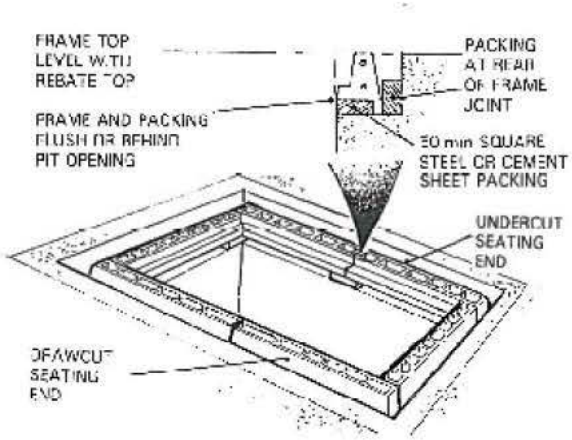
Recommended rebate sizes are shown above.

STEP 2 – REMOVE THE COVER FROM THE FRAME

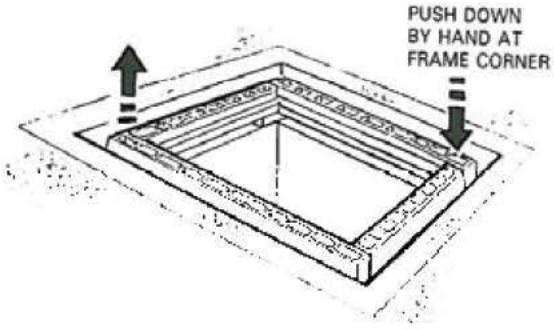
STEP 3 – LOCATE AND LEVEL THE FRAME IN THE REBATE

- Ensure that the frame is correctly oriented for the required direction of cover removal.
- Pack under each corner joint of the frame to raise and level the frame top with the rebate top.
- Ensure that the packing and frame do not protrude into the pit opening.



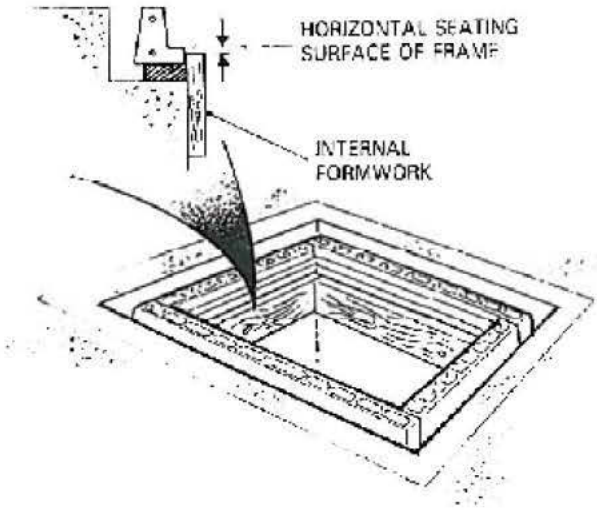


Check for any rocking motion between diagonally opposite frame corners. Adjust packing to eliminate any rocking of frame.



STEP 4 – SET UP THE INTERNAL FORMWORK

Ensure that the formwork does not project above the horizontal seating surface of the frame (otherwise the cover cannot be seating prior to concrete infill).

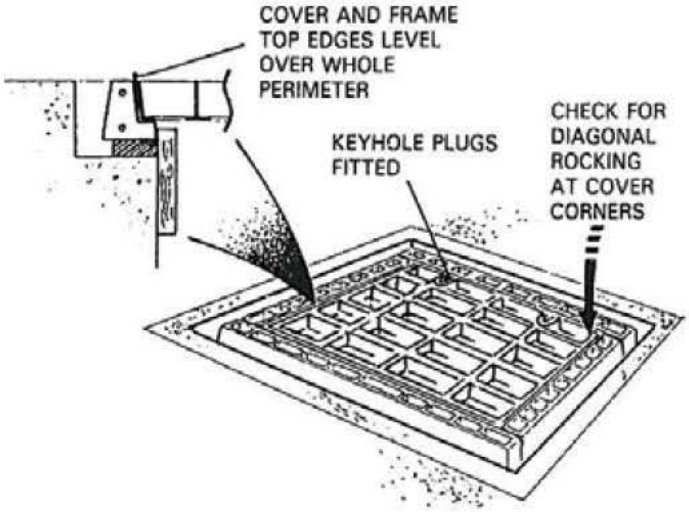


STEP 5 – CLEAN THE COVER AND FRAME SEATINGS

All cover and frame seating surfaces must be free of dirt or dust to ensure the correct seating of the cover in the frame.

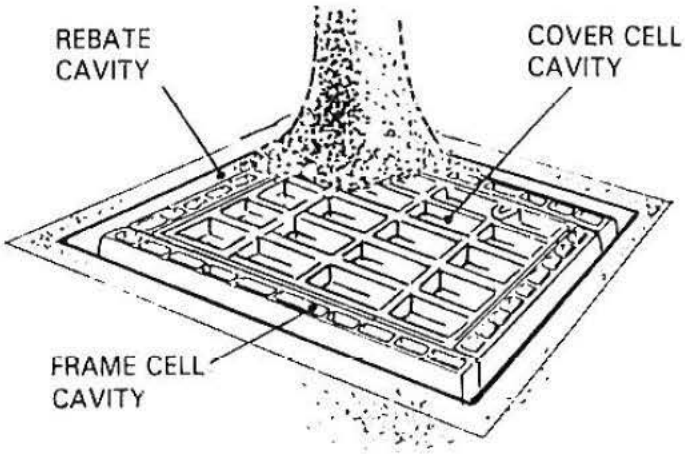
STEP 6 – PLACE THE COVER IN THE FRAME

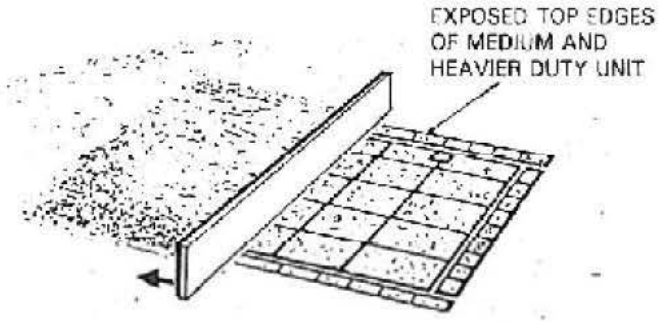
- Ensure that the cover is correctly oriented in the frame according to the mark or tag (see STEP 1).
- Ensure that keyhole plugs are fitted.
- Check for any diagonal rocking movement between the cover and the frame and adjust the frame packing if necessary.
- Run a finger along the top edges of the cover and the frame and check that the edges are level over the whole perimeter of the unit (if not level, dirt may be present in the seating surfaces or the frame may be distorted due to rough handling).



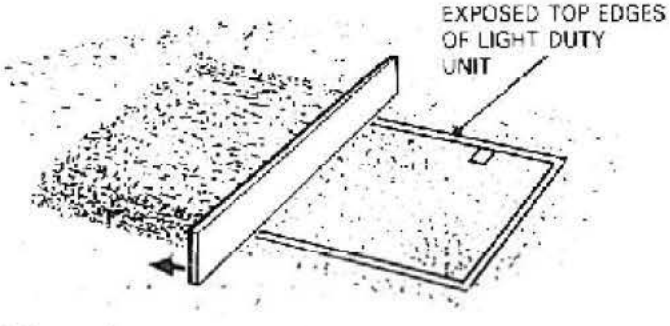
STEP 7 – POUR THE CONCRETE INFILL

Pour the concrete and tamp down to ensure all cavities ir rebate and cover, and frame cells are completely filled.



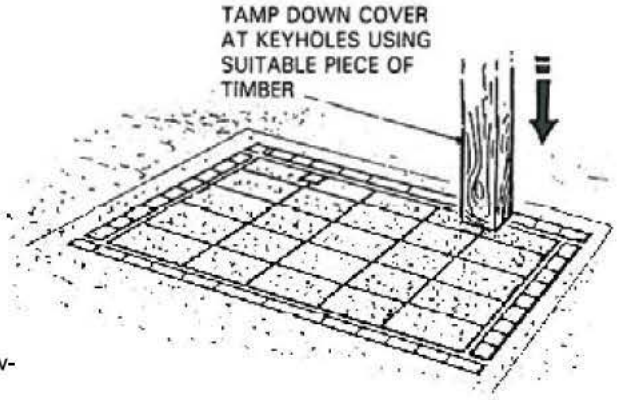


Trowel or screed off excess concrete to expose all top frame and cover edges.
Do not remove covers for 74 hours.



STEP 8 – SEAL THE UNIT FOR OPERATION

- Remove the cover and internal formwork.
- Clean all cover and frame seating surfaces
- Apply GATIC SEALING COMPOUND liberally to all vertical and horizontal seating surfaces of frame
- Install the cover in the frame and tamp down the cover at the keyholes until the top edge of the cover is level with the top edge of the frame.



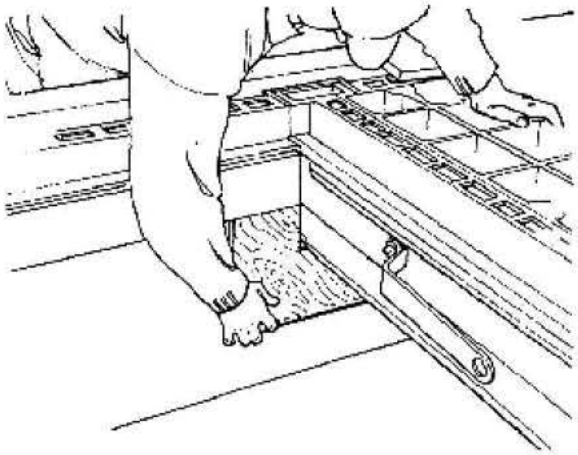
STEP 9 - PREPARATION FOR CONCRETE FILLING

- Access to the underside of the cover is required so that the formwork can be placed inside the pit. This is done by removing one or more of the covers from the centre row.

- Pay attention to the formwork around the wallbox locations to prevent concrete from entering wallboxes.

- Ensure that there is no debris in the rebate recess prior to concrete pouring.

- Check that all plastic keyhole plugs are firmly in place in the lifting slots. This prevents concrete entering the slots during pouring.



STEP 10 - CONCRETE POUR

The minimum required grade of concrete is 32 mPa with a maximum of 12mm aggregate,

- Ensure that the cellular bar frames are completely filled by vibration or by tamping the concrete in place.

- When finishing the concrete rebate junction between rebate and slab do not finish with edging tool but finish flush with adjacent surface.

STEP 11 - SEALING COVERS AND BEAM LOCATION BOXES FOR OPERATIONAL USE.

- Ensure concrete is cured a minimum of 74 hours.

- Remove covers and beams from the frame.

- Clean all mating surfaces.

- Apply sealant to the top 50mm of the beam location wallboxes.

- Lower beams back into position ensuring that sealant is not removed accidentally by contact with the bottom edge of the beam.

- Place all covers into position without sealant.

- Clean the top surface of the unit further removing any debris.

- Remove the undercut cover of any row. Check the seating of the covers and frames for any debris. Clean if necessary.

- Sealant is to be placed on the vertical and horizontal seating surfaces of frames only. A thickness of 3mm build up is required.

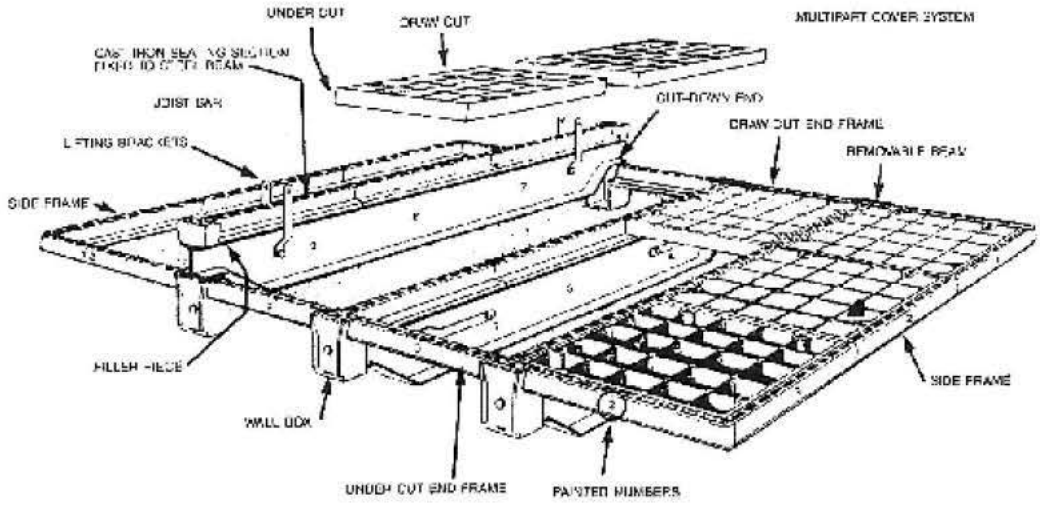
- Lower cover into frame and tamp to top of the covers into position until covers are flush. Clean excess sealant that is squeezed out through the remaining gaps.

NOTE - IMPORTANT

Do not slide covers along the frame into their final positions as this causes removal of the sealing compound from the mating surfaces.

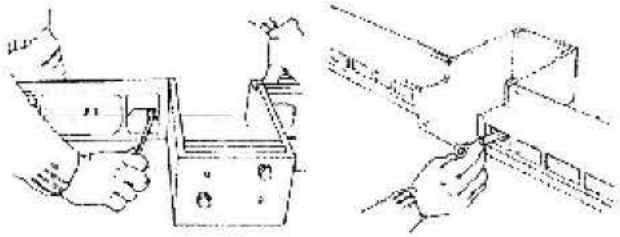
- Remove the next cover and apply sealant to both side frames and the rear of the first cover.
- Repeat this sequence as described to remaining covers.
- Check all keyhole/lifter points to ensure all plastic plugs are in place.

PART 2 – MULTIPARTS



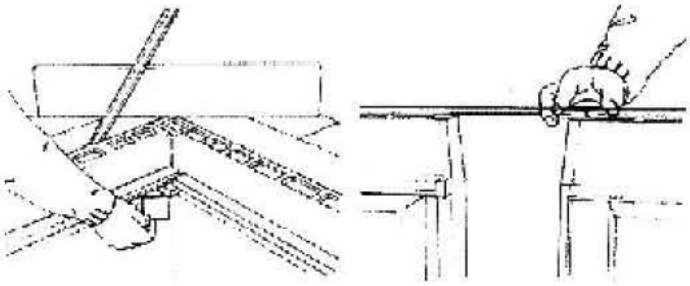
MULTIPART INSTALLATION GUIDELINES

- Check the rebate dimensions and the pit opening size against the information supplied on the Product Drawing.
- When unpacking the sections of the frame, take care not to crush or damage the leaded joints.
- Place the undercut and drawcut frames in the wallbox rebates.
  - Join wallbox to end frames with both bolts provided (if shipped in sections)
  - Ensure top of wallbox and frame is flush



- Place side frames in rebates as guided by painted numbers on outside of frame (and product drawing).
  - Remove nuts and washers from side frames.
  - Insert leaded end completely into end frame (Undercut or drawcut end).
  - Put top nut and washer only in place. Tighten firmly with hand tools (ensure bottom of frame makes contact with mating frame).

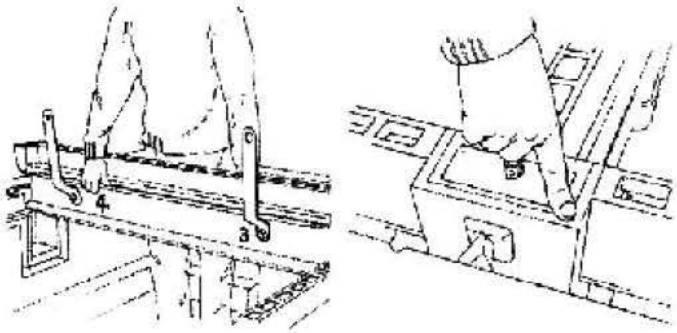
- Pack up the four corners to finished level required. Run string line across top of the wallboxes at the drawcut and undercut ends.



Note: Do not use timber as a packing medium.

- Use cast iron, cement sheet or steel spacer pieces to pack up the underside of the wallboxes to set top of frames level with string lines.
- Clean frame to remove debris from all vertical and horizontal seatings sections.
- Clean all wallbox interiors as well.

- Place beams into wallboxes so that numbers marked on beams and wallboxes correspond. Ensure that the beam end sections are flush with the top of the wallboxes and metal to metal contact is made.

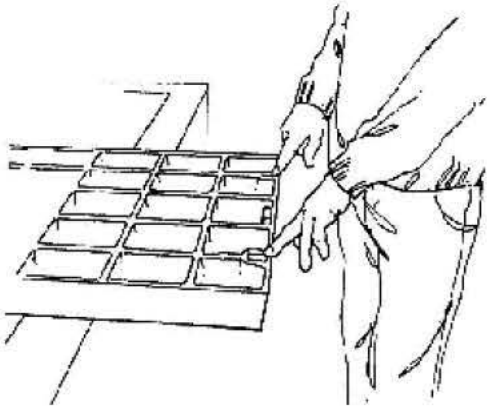


- **INSTALLING COVERS**

Clean underside of covers, and the vertical and horizontal seating surfaces, of the covers.

- Select a column of covers located between two central support beams and place the cover into this column at the drawcut end.

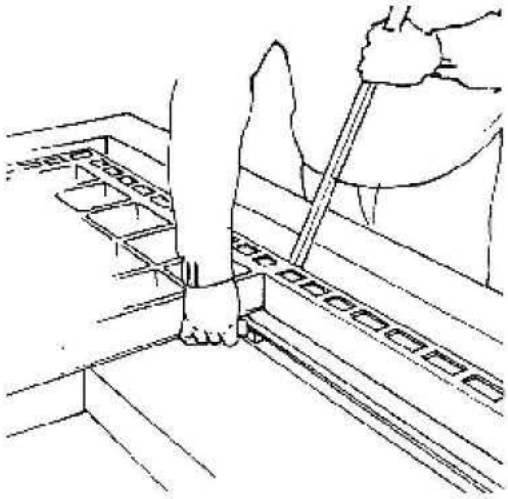
Note: The drawcut end is determined by the location of the two or four keyholes on the same end of the cover.



INSTALLING COVERS CONTINUED

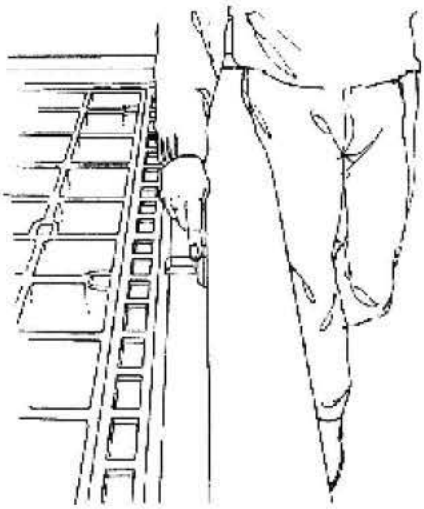
- Place cover into that column as per sequenced numbers, starting with drawcut end.
- Check covers for rocking in frames.
- If movement is detected, place packing pieces under the wallboxes supporting the beams on which the covers rest.
- Continue to place the column of covers in position, checking each for rocking.
- Complete each row of covers, working from the central columns outwards.

Note: As covers are placed into the frame, the frame begins to square itself progressively.



- As covers are placed into position, check the side frames and pack if necessary
- Check for metal to metal contact.

Note: It may be necessary to wedge the side frame and wallboxes into position with a wedge or spacer between the rebate wall and the frame member. It is vital that the wedge material is not made of timber.

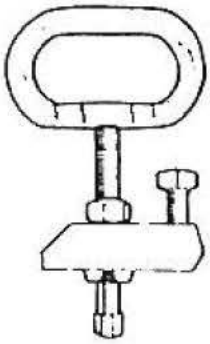


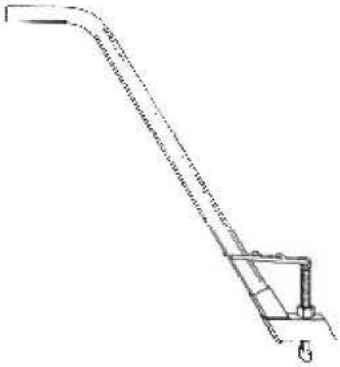
IMPORTANT

It is essential that the wedge packer piece remains in place during the concrete pour. This is important to maintain the correct alignment of the frame members and wallbox units.
Particular attention to the wallbox/beam location box is needed during this stage. Check for and eliminate vetical gaps between wallboxes and beam ends. Pack side frames to eliminate gaps.

LIFTING KEYS

All GATIC covers and the heavier grates are fitted with keyholes for lifting purposes. Several types of lifting keys are available:



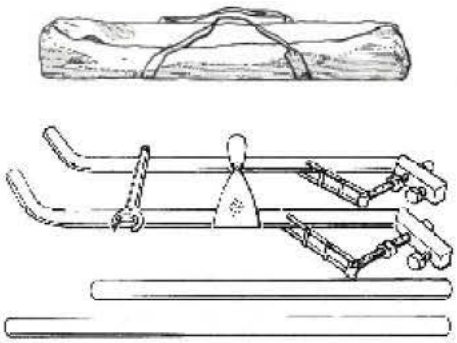


Name	Code
The Long-handle Key	GM374LH

LIFTING KEY PACK

For your convenience a lifting keypack is available which comprises:

- Two long-handle lifting keys.
- A spanner.
- A length of 25mm diameter piping.
- A scraper.
- A canvas bag for ease of carrying the above items.



Name	Code
The Lifting Key Pack	GM374LHP

Contact us:

Ph: +649 625 4389

email: civil@tropex.co.nz

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