



iLINO

BAYABLE SYSTEM ENCLOSURES



IEC60529-1989, AS1939-1990, AS2380.1-1989,
AS2380.6-1988, AS/NZS61241.1.1:1999 AS2236-1994

Important: IP55 compliance requires the purchase of
additional side cladding panels.

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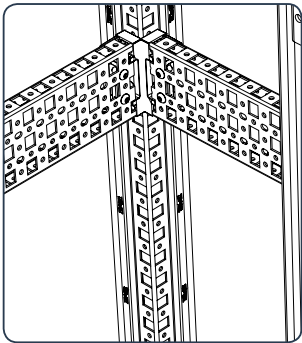
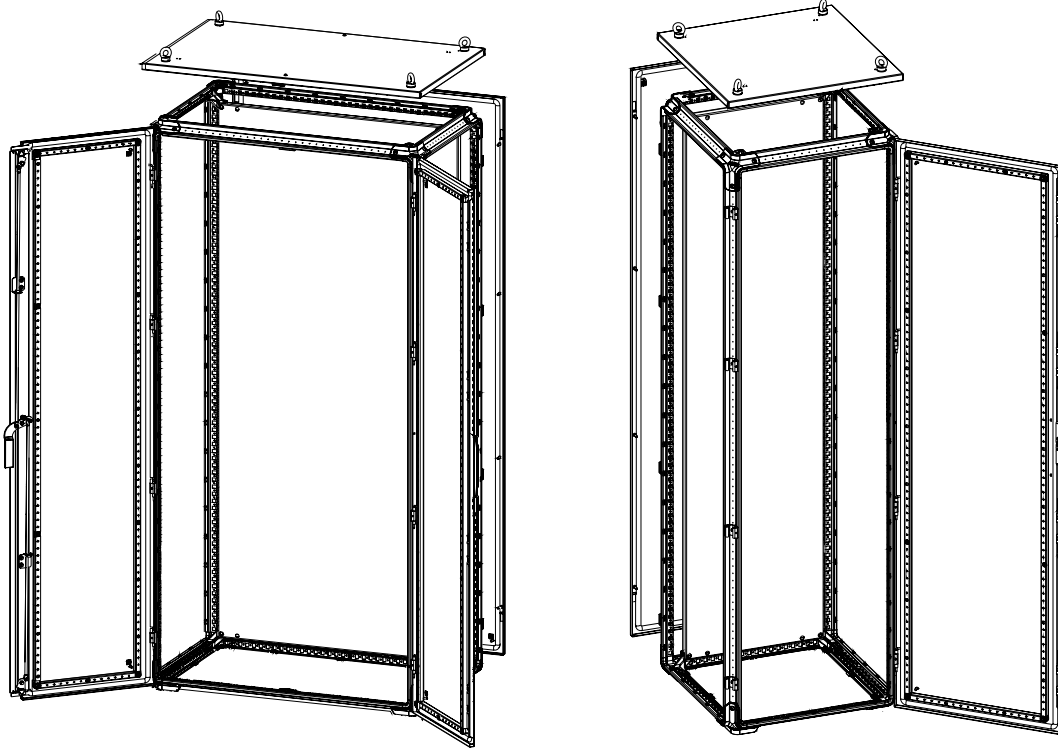
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PRODUCT OVERVIEW

DESIGN

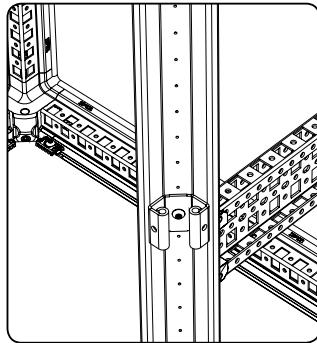


Modular Design

The rail is galvanised, pre-punched, roll-formed, ultrasonically welded and re-galvanised. iLINQ frame is designed to an IEC grid:

Profiles have attachment cavities at 12.5 increments.

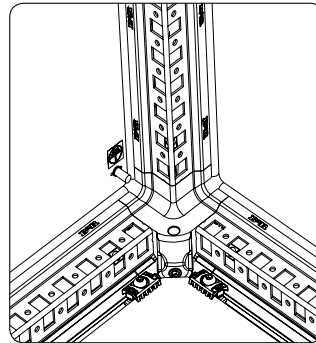
- Attachment cavities for M5 taptite at 25mm increments.
- M6 and M8 cage nut fixing locations at 25mm increments.



Flexible Design

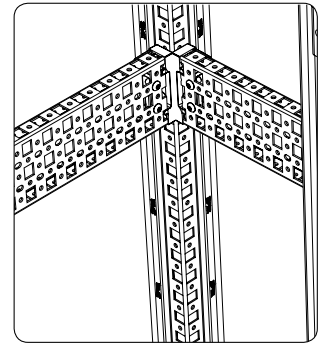
The hinging design of iLINQ allows for a 170° door opening. Due to the symmetrical iLINQ design, any combination of doors, hinged cladding can be fitted to any side. The time taken to rotate doors is:

- Single door/swing handle = 3 minutes
- Double door/swing handle = 5 minutes.



Symmetrical Design

The corner tripod provides the core strength and balanced framework of the iLINQ system. Perfectly symmetrical, the diecast tripod is mechanically fastened to the profile rail to provide unrivalled strength.



Efficient Design

Based on 25mm increments, the iLINQ frame maximises usable space. Advantages include:

- Ability to position mounting pans on all axes.
- Ability to intersect matrix rails on the same plane.

PRODUCT OVERVIEW

SPECIFICATION

Application

- Industrial automation
- Industrial control
- Plant construction
- Data and networking infrastructure
- Telecommunications

Materials

Frame	1.5mm multi-folded galvanized steel profile.
Doors	2mm powder coated steel.
Mounting Pan	2.5mm galvanised steel.
Rear Panels and Side Panels	1.5mm powder coated steel.
Gland Plates	1.5mm powder coated steel.
Locks	1.5mm galvanised steel.
Gasket	Polyurethane foamed in place

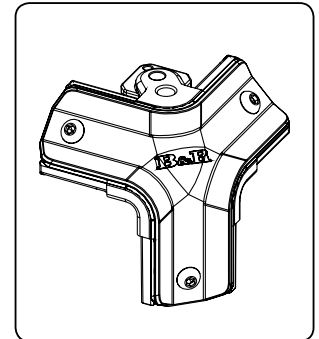
Features

Protection	Preconfigured tiers protected to IP55 to EN60529 (see page 10).
Finish	Frame and Exterior powdercoated in RAL 7035.
Frame	Roll formed frame profile mechanically fastened using die-cast corner tripod. Each vertical and horizontal profile piece is firstly glued and then screwed into tripod ensuring added strength and absolute squareness of the frame.
Mounting Rail	galvanised, pre-punched to IEC grid, roll-formed, ultrasonically welded and re-galvanised.
Doors and cladding	Perfectly symmetrical and fully reversible (left or right hand opening) with hinging in four places. Swapping of doors has maximum time 3-5 minutes. Supports loads of up to 80kg.
Mounting Pans	Double folded sides for strengthening with a rear minimum mounting position of 25mm allowing maximum equipment space. Supports load of up to 500kg.
Rear cladding	Fixed or hinged variations. Able to be replaced by a door at any time. Supports loads of up to 80kg.
Top	Available in vented or unvented variants
Side cladding	Fixed or hinged variations. Supplied in packs of 2. Supports loads of up to 80kg.
Locking	4 point locking system with a 3mm double bit lock swing handle insert supplied as standard. Key supplied.
Earthing	All panels and doors are equipped with earthing studs.
Delivery Options	Pre-configured as standard tier with standard components (see page 6). Note: Side panels and plinths ordered separately. Assembled to order - customised with all required components. Arrives completely assembled and palletised.

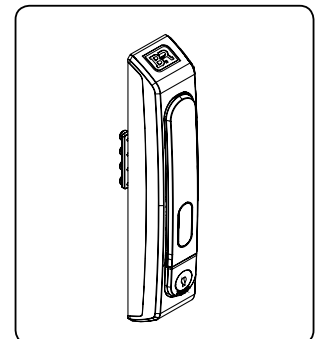
Approvals

- IP Rated to IP55 - in accordance with AS60529-2004 and IEC60529-2001 as shown on Simtars testing certificate (See page10).
- Lloyds Register -
- CE Mark

IEC60529-1989, AS1939-1990, AS2380.1-1989, AS2380.6-1988, AS/NZS61241.1.1:1999 AS2236-1994



Strength
iLINO offers a patented diecast tripod design. This corner design offers superior strength as it is mechanically fastened.



More Value
iLINO doors come standard with B&R's patented swing handle design.

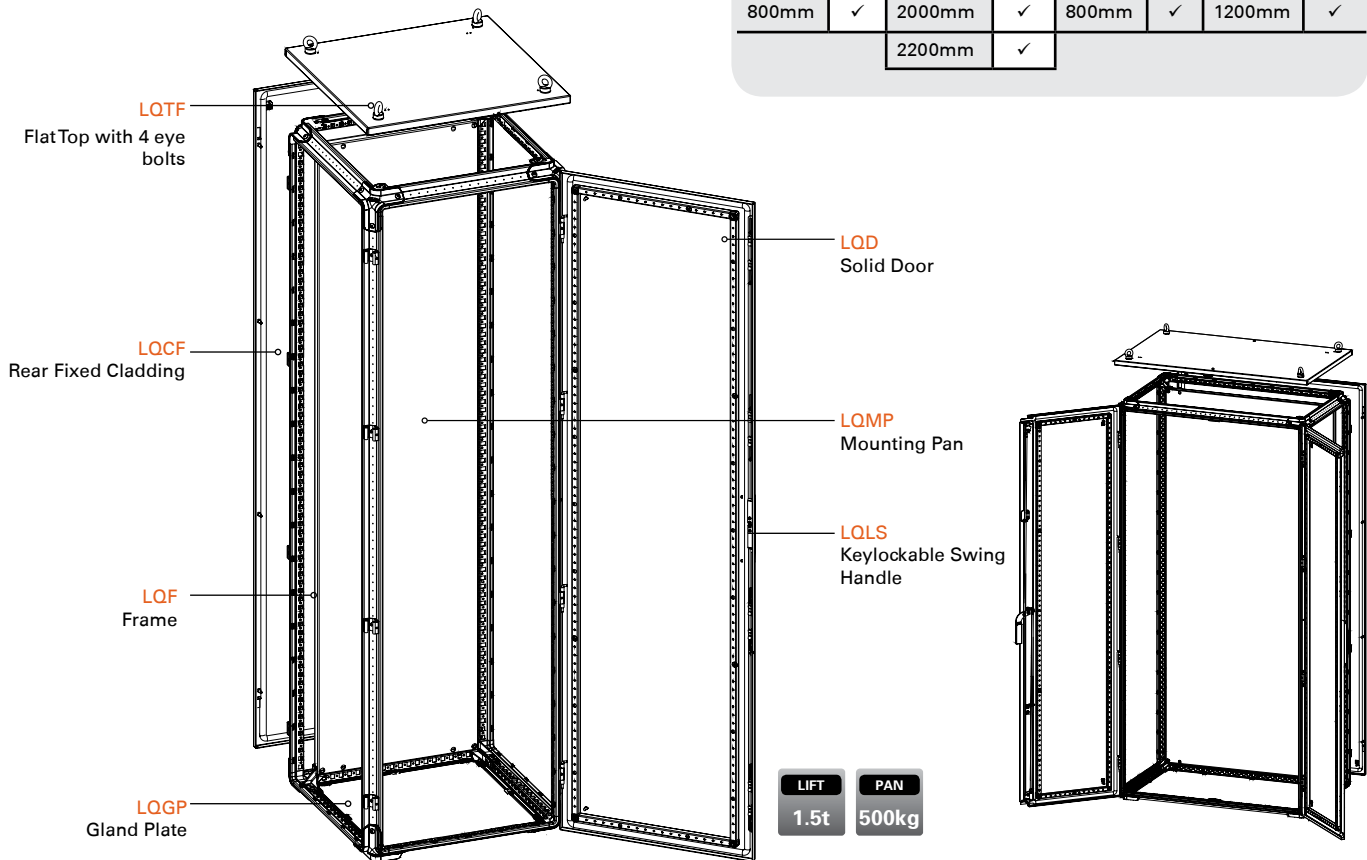
ORDERING OPTIONS

STAND-ALONE



IEC60529-1989, AS1939-1990, AS2380.1-1989,
AS2380.6-1988, AS/NZS61241.1.1:1999 AS2236-1994
Important: IP55 compliance requires the purchase of
additional side cladding panels.

Depth	Height	Width			
		Single Door		Double Door	
400mm	✓ 1400mm	✓ 400mm	✓ 600mm	✓	✓
500mm	✓ 1600mm	✓ 500mm	✓ 800mm	✓	✓
600mm	✓ 1800mm	✓ 600mm	✓ 1000mm	✓	✓
800mm	✓ 2000mm	✓ 800mm	✓ 1200mm	✓	✓
	2200mm	✓			



Pre-Configured Standard

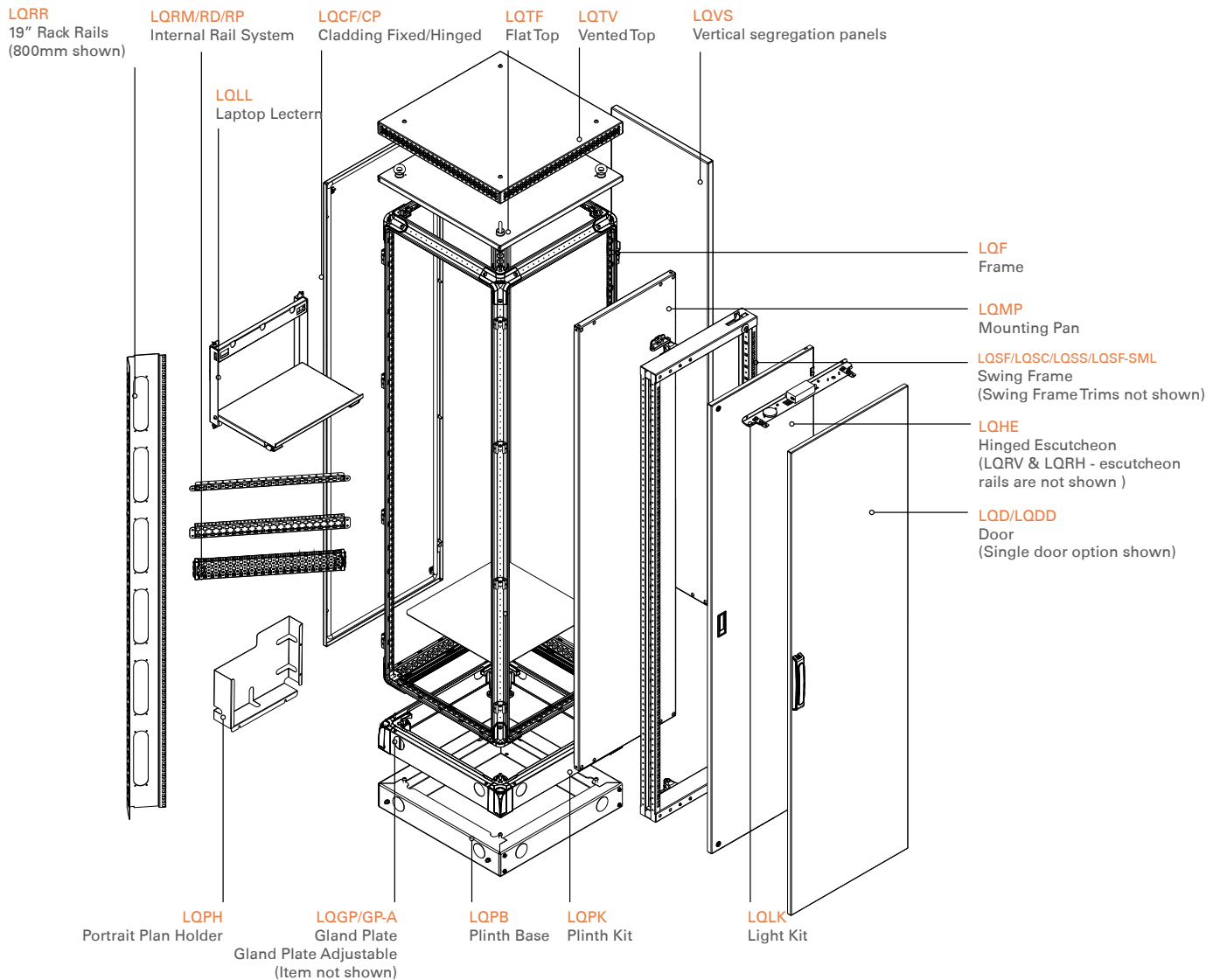
iLINQ Stand-alone enclosures are available in single or double door configurations and can be quickly and easily bayed together. A standard enclosure comes preassembled with frame, door, fixed rear panel, top (with eye bolts), fixed gland plate, mounting pan and a key lockable swing handle. Once bayed together or fitted with side panels, enclosures are rated to IP55, ensuring limited ingress of dust and complete protection from low pressure jets of water. An extensive range of components and accessories are available to ensure your enclosure meets your exact requirements.

Inclusions

- Frame
- Rear cladding (screw fixed)
- Flat top with four eye bolts
- Solid door
- Keylockable swing handle (92268)
- Mounting pan – 3mm thick galvanised
- Fixed gland plate – 1.6mm thick galvanised steel

ORDERING OPTIONS

ASSEMBLED TO ORDER



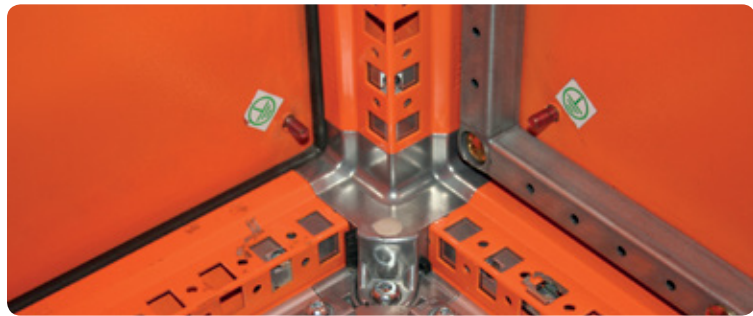
Custom Assembly

iLINQ is a bayable enclosure system that can be configured to suit a wide variety of applications. It features a unique symmetrical rail profile that allows components to be interchangeable whether on top, bottom, front or back. As part of the design process B&R has worked with a wide variety of industry experts to ensure iLINQ suits industry specifications and applications.

The symmetrical design of the enclosure system allows the same part to fit in many locations. The easy to use catalogue clearly lists all parts and accessories for each enclosure size. All B&R staff have had extensive assembly training and are available to help configure your iLINQ bayable enclosure system.

TECHNICAL SPECIFICATIONS

MATERIALS



B&R's enclosures are built to provide superior corrosion protection to meet the most demanding environmental conditions. Our enclosures go through a four part protection process to extend the product life and to provide maximum protection for your equipment. This protection process goes right through from the selection of materials, to the final paint finish.

Premium grade zinc coated steel is the main material used in B&R's range of enclosures. Tests show that when materials are scratched and exposed to a corrosive environment, zinc coated steel prevents the painted surface from peeling, and corrosion from spreading through the material. This can mean a significant increase in the working life of an enclosure.

B&R's stainless steel enclosures use Grade 316 stainless steel which offers superior protection against the most common corrosive agents produced by the Australian and New Zealand environment. Our manufacturing processes have been accredited by the Australian Stainless Steel Development Association (ASSDA) to assure our customers have the highest quality products.

Superior Gasket And Sealing

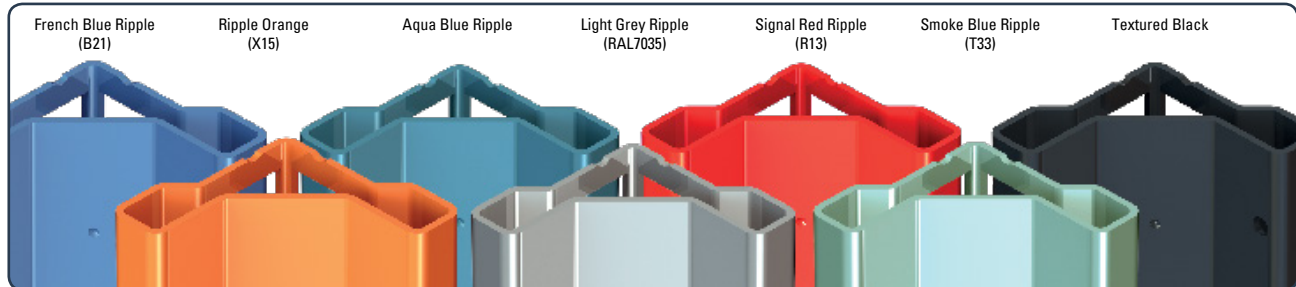
B&R's specially formulated gaskets, together with our top of the line enclosure sealing system, have been designed to provide the best and most consistent seal in the industry.

Our gaskets are 'Formed-in-Place' (FIP) using state of the art robotic technology, so that the polyurethane is accurately placed and formed on the sealing surface. This process ensures that the gasket is applied continuously and consistently which avoids leakages and ensures long-term adhesion to the metal surface.

B&R's enclosures have an advanced sealing system that has been designed to reduce the need for maintenance over the working life of the enclosure. Our sealing system (as shown on the right) has a wide gutter and flat face allows for a greater sealing surface to extend the life of the gasket, while preventing water and dust from entering the enclosure.

TECHNICAL SPECIFICATIONS

PAINT TREATMENT & PROCESS



Optional iLINQ colours.
Note: Standard colour is Light Grey RAL7035

All metallic powdercoated enclosures manufactured by B&R Enclosures are powdercoated using a modified polyester paint, and conform to the following in-process testing. All test results are recorded and audited in accordance with our quality management system (ISO 9001:2008).

The Pre-Treatment Process

Titration tests are conducted (as noted below) to ensure that the values recorded meet the specifications that have been agreed in consultation with our pre-treatment chemical and powdercoat supplier recommendations.

Zincanneal®

B&R Zincanneal® products have a continuous hot-dipped zinc coating (20 microns) added to the raw material, providing improved corrosion resistance, beneath the powder coating, and receive a five stage pre-treatment process.

The pre-treatment process consists of five stages:

- Stage 1: Alkaline Cleaner
- Stage 2: Reticulated Freshwater Rinse
- Stage 3: Iron Phosphate Coating
- Stage 4: Reticulated Freshwater Rinse
- Stage 5: Final Rinse, Demineralised Water with Polymer Additive

Stainless Steel

B&R stainless steel products are powdercoated, as required, receiving a three stage pre-treatment process. An undercoat of metal primer (40 microns) is applied before applying the powder-coating.

The pre-treatment process consists of three stages:

- Stage 1: Alkaline cleaner
- Stage 2: Reticulated freshwater rinse
- Stage 3: Powdercoat metal primer

Powdercoating Thickness

The powder-coating is applied to the steel at an average coating of 100 microns for ripple finish and an average coating of 70 microns for gloss finish. The minimum coating thickness is 60 microns on the exterior, and 25 microns on the interior of the enclosure. This method complies with the requirements of AS/NZS 4506:2005.

Paint thickness tests are conducted to a specified frequency, using a calibrated paint inspection gauge.

This method complies with the requirements of AS/NZS1580.108.1:1994.

Cure test (solvent resistance method)

Using a cure test solvent, the powdercoating is tested to differentiate between a cured and under-cured coating. The test has been developed in consultation with our powdercoat suppliers and incorporates the comparison of test results with known cured panels. This method complies with the requirements of AS/NZS 4506:2005.

Adhesion (Cross Cut Test)

This test is conducted to confirm the Adhesion Properties satisfy the requirements of AS/NZS 1580.408.4:2004.

Paint Colour Comparison

All powdercoat colours used by B&R are inspected against approved samples every time they are used. The samples themselves are calibrated, to ensure they match the colour standards specified in AS/NZS 2700:1996, or an approved customer-supplied sample.

B&R uses the standard electrical industry colours of pebble grey (RAL7032) and white (mist blue). Enclosures and external components are powdercoated in pebble grey, with a ripple finish. Internal components are powdercoated white (mist blue), with a gloss finish.

TECHNICAL SPECIFICATIONS

TESTING & CERTIFICATIONS

Simtars
Engineering, Testing and Certification Centre

2 Smith Street, ROZEMAH, QLD 4301, Australia Phone +61 7 3810 6381
Postal Address: PO Box 467, GOOCRA, QLD, 4300 Australia Fax +61 7 3810 6366

Test Report

To

AS 60529-2004 Degrees of protection provided by enclosures
(IEC 60529:2001) (IP Code)

Report No: NE10006

Date of Issue: 24 March 2010

Job No.: 09/0146

Applicant/Customer Name: B & R Enclosures Pty Ltd
51 Sandroke Street
HEATHWOOD QLD 4110

Equipment Details: iLINQ Range of Enclosures

Degree of Protection: IP56 for double door enclosure configurations
IP66 for single door enclosure configurations

Checked: G Frost Approved Signatory: D Scoby

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EE0001 Status Date: 10/10/08 GB Page 1 of 3

 **CERTIFICATE OF REGISTRATION**

This is to certify that:

B & R Enclosures Pty Ltd
ABN 67 557 587 182
Brisbane South Industrial Park, 51 Sandroke Street HEATHWOOD QLD 4110 AUSTRALIA
505 Grand Junction Road WINGFIELD SA 5013 AUSTRALIA

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of **ISO 9001:2008**

for the following scope

Design, manufacture and supply of enclosures and support accessories for the electrical, electronic and telecommunications industries. Product ranges include Industrial Enclosures and Switchboard Building Systems, Data, Communications and Electronic Enclosures, Domestic and Commercial Enclosures.

Certificate No: QEC1031

Issued: 27 July 2012 Originally Certified: 21 August 1992
Expires: 30 October 2015 Current Certification: 23 July 2012

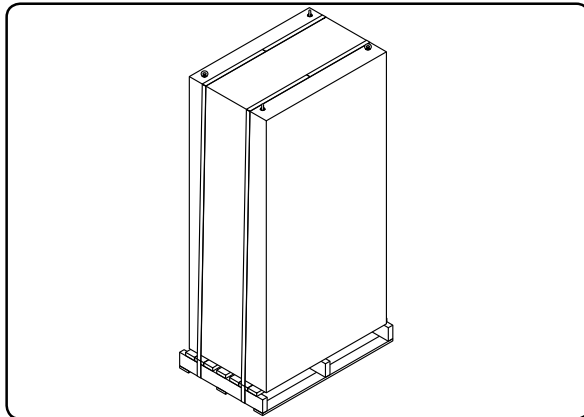

William Smith, Distribution Manager Dawn Lily, General Manager - Maintenance Services

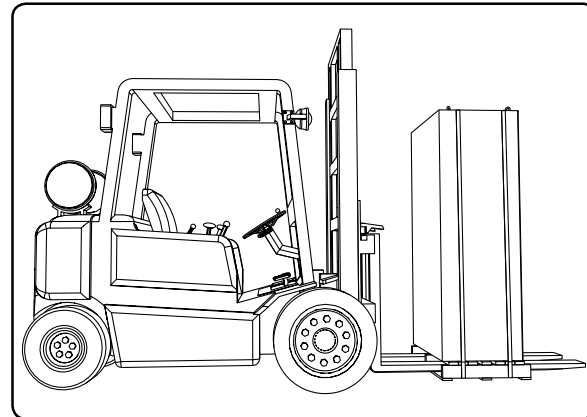
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TRANSPORT & LIFTING

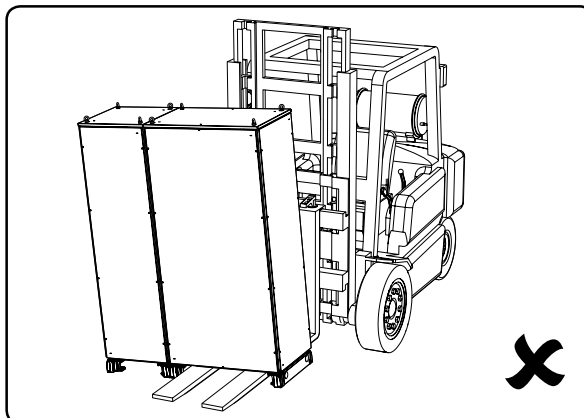
BEST PRACTICE



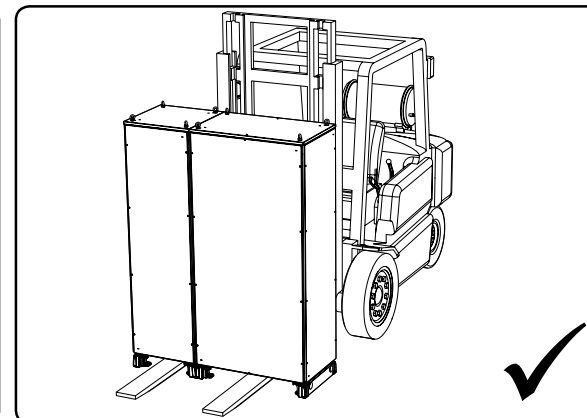
1.0 Forklifting pallet



1.1 Ensure iLINQ is strapped or screwed to pallet before moving



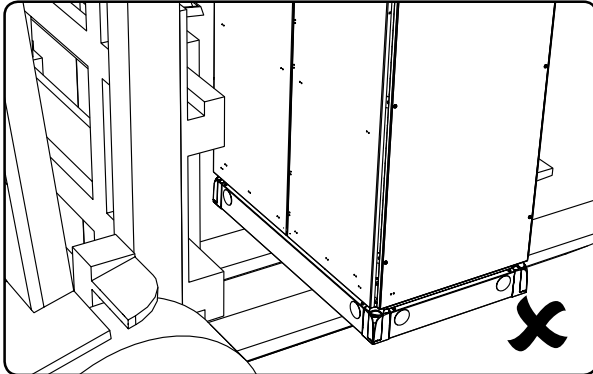
1.2 Lifting bayed enclosures



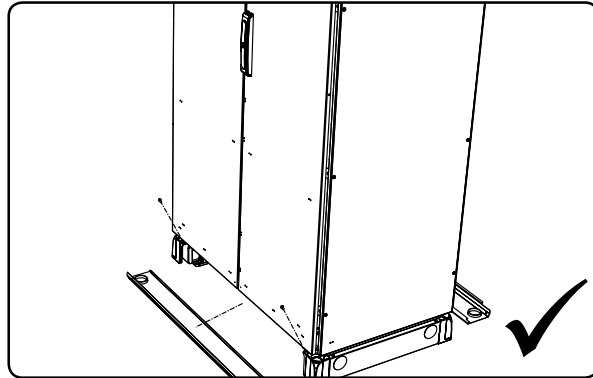
1.3 Ensure mass is centred between forks

TRANSPORT & LIFTING

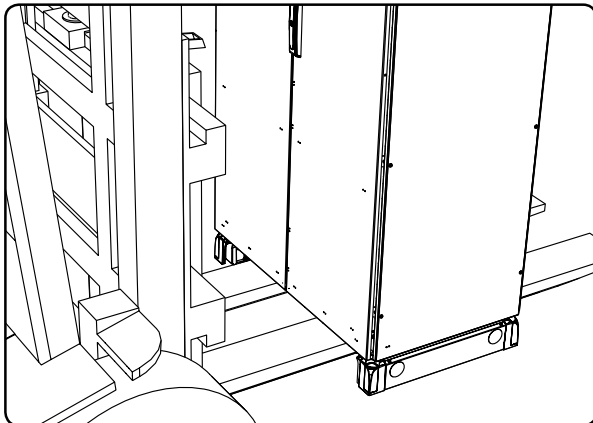
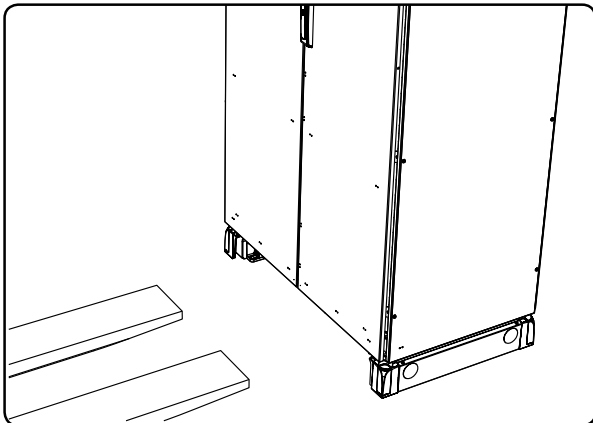
FORKLIFTING LQP - Tiers mounted using plinth kit



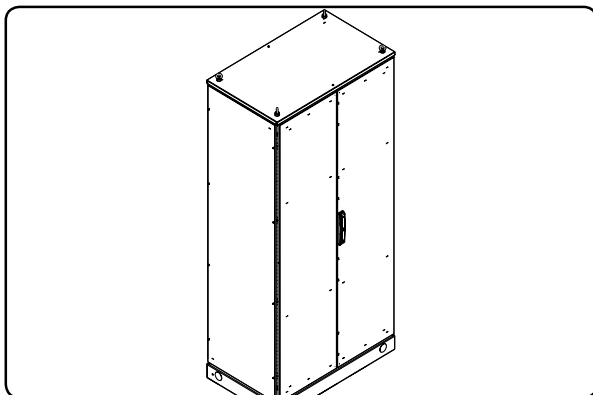
1.0 Forklifting LQP: **Do not** support by cladding!



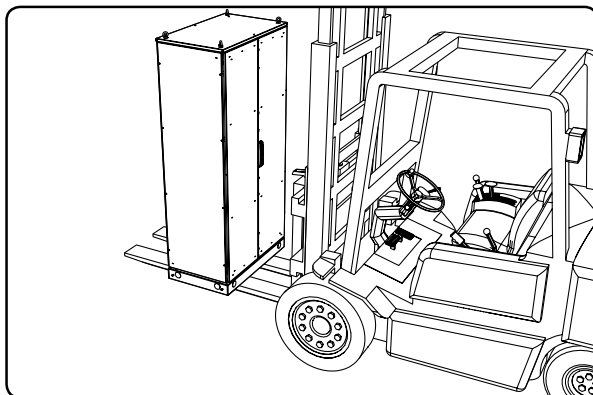
1.1 Remove cladding first



FORKLIFTING LQPB - Tiers mounted using iron plinth base



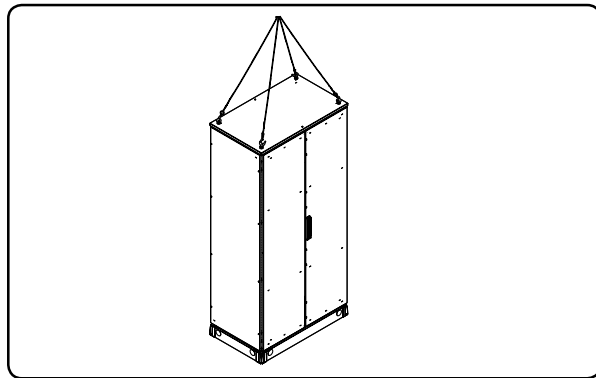
1.0 Forklifting LQPB



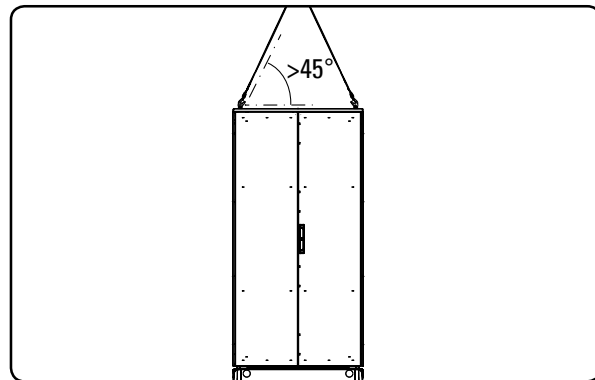
1.1 LQPB can be lifted as shown

TRANSPORT & LIFTING

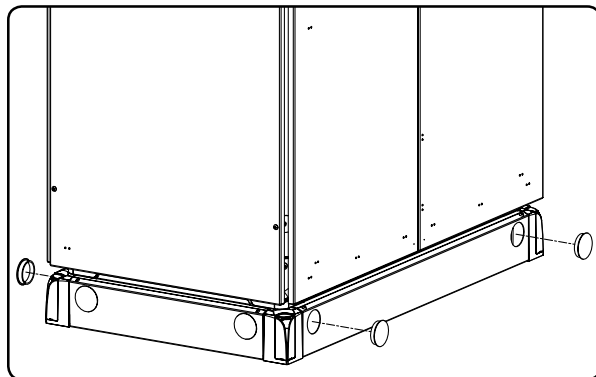
LIFTING BY EYEBOLTS



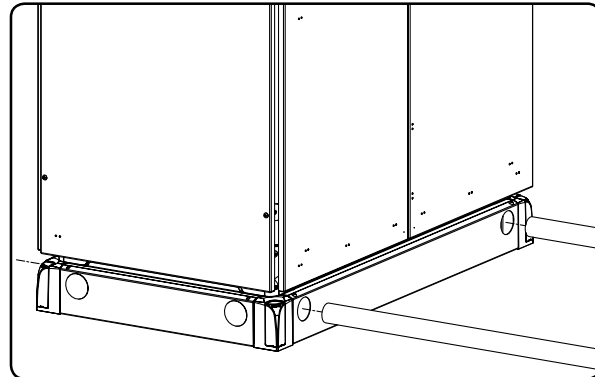
1.0 Lifting iLINQ by eyebolts



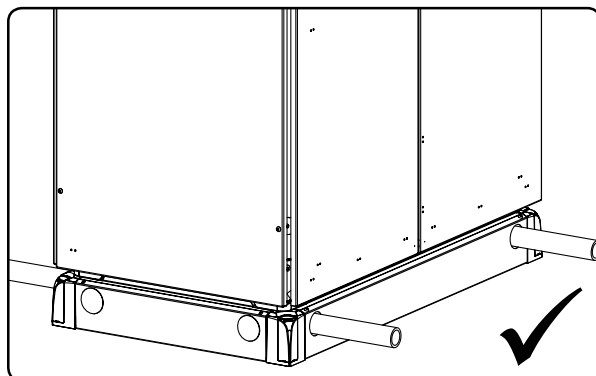
1.1 Ensure lifting rope angle is rgreater than 45° from horizontal



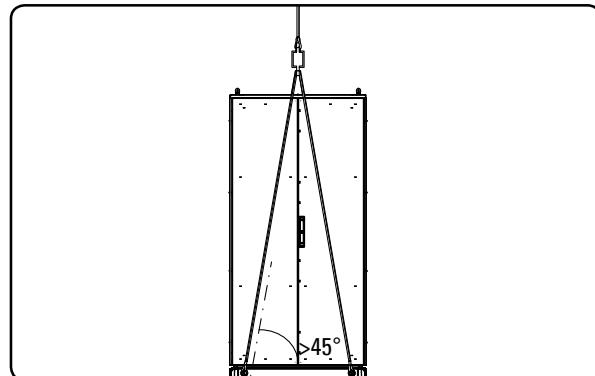
1.2 Fitting lifting pipes - remove lifting hole caps (LQP & KQP)



1.3 Insert pipes



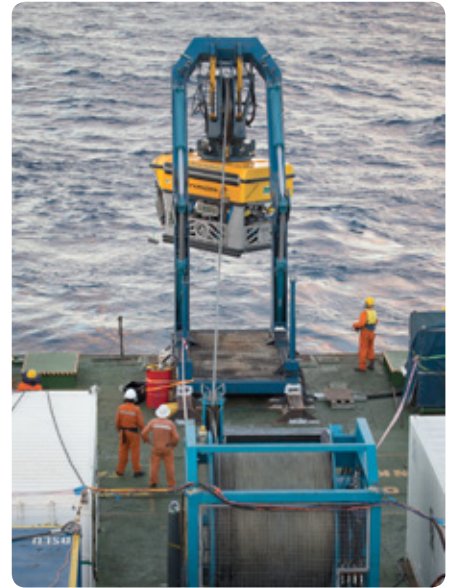
1.4 Ensure pipes are secure and evenly distributed



1.5 Ensure lifting rope angle is rgreater than 45° from horizontal

CASE STUDY

TOTAL MARINE TECHNOLOGY



Total Marine Technology (TMT) is an Australian based company situated in Bibra Lake, Western Australia, who specialise in the design, engineering, building and operation of ROVs (Remotely Operated Vehicles) and subsea tooling. Their products are used in subsea energy production around the world.

The ROVs and intervention tooling are predominantly designed for the offshore drilling and production industry. However, the ROVs are also used in almost any scenario where work needs to occur at seafloor level and requires complex equipment and technology to do so. Other key operations that TMT ROVs are used include: subsea tree installations, removal of calcareous build up on dynamic assemblies, barge crossing deployment supports, field construction and abandonment and finally, varying-term environmental surveys.

TMT prioritise seamless partnerships between robust technology and advanced training to manage unplanned events in these high risk markets. Playing a role in TMT's successful project designs and deliveries is iLINQ; a modular,

bayable enclosure system designed and manufactured by B&R.

Specified by TMT, iLINQ is a preferred solution because of B&R's ability to confidently supply as well as provide collaborative engineering and on-site technical support. In a typical ROV design, iLINQ controls and segregates low voltage and high voltage using multi-meters to manage current during drilling operations.

iLINQ is supplied as a standard, pre-assembled solution to TMT including mounting pan, swing handle and matrix rail positioned horizontally in the enclosure. A fast turnaround time of assembly and delivery means TMT are able to build the enclosure, including cut-outs in the doors for venting and in the roof for cable entry requirements. iLINQ's flexibility in design and delivery is regarded as a key advantage to TMT who have both the skill and equipment to execute customisable solutions themselves. Consequently TMT prefer to have the standard cabinet on the shop floor faster, so they can then modify and fit out in a timely manner.

CASE STUDY

WARRNAMBOOL MEAT WORKS



Midfield Meats based in Warrnambool has been a local hub for jobs and growth within the area since 1975. Today, it is also a major player in the domestic and export market, with beef, lamb, veal, mutton and their by-products traversing Australia and the globe.

As a wholly Australian owned and operated company, Midfield has implemented a strong supply chain largely sourced from within the local region, enabling them to provide clean and green food consistently. Similarly, B&R find many visionary comparisons with Midfield who also believe in instigating mutually beneficial growth opportunities for Australia in an increasingly global marketplace.

To accommodate that growth, Midfield announced \$20 million worth of upgrades earlier in the year, to be rolled out over a two year period. Improving efficiencies required Midfield to upgrade their cooker equipment. The cookers assist with rendering animal by-products that cannot enter the food chain by processing them into stable, value-added materials.

In making the transition however, the challenge was in removing the existing cooker to be refurbished and re-commissioned and scheduling appropriately the board expansion required when the cooker was returned back

to operation. Brendan Maloney, Midfield's maintenance electrician formulated a project brief driven by scalability, flexibility and control.

The need to stage the project and control the roll-out costs associated demanded an enclosure solution that enabled temporary equipment power while transitioning the cooker and then a permanent, robust power solution to handle the upgraded, refurbished equipment.

iLINQ was selected as a modular and flexible solution that was fit-for-purpose in addressing the plant's needs. With a medium term plan to scale the board to 6 tiers and house it in an outdoor switch room, Brendan has been able to begin the upgrade using a single iLINQ tier located indoors to temporarily power the single cooker. This enabled the plant to continue production as normal without any downtime building new infrastructure. According to Brendan, the advantage of the iLINQ design lies in its flexibility to be quickly arranged to suit the requirements. Expanding the board once the cooker is recommissioned has been confidently planned and managed with B&R using standard iLINQ components. Built to withstand challenging environments like the meatworks, iLINQ also enabled the project flexibility to deal with unforeseen changes and scalability in design.



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