

See new copper modular cage designs and new release door.

MRI Room Turn Key Solutions

Australasia's largest turn-key range of MRI RF cage design and construction related products and services. Our single source supply platform includes construction, engineering, design, project management, planning, testing and accessories.

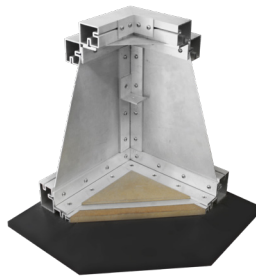
your single source supplier





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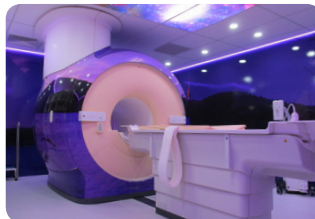
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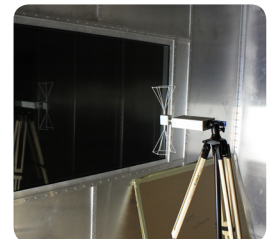
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Imaging Solutions' Capability Statement

Imaging Solutions' commitment to the medical imaging market in Australia and New Zealand (ANZ) has grown rapidly during the past 5 years. During this time, the organisation has evolved significantly and has pro-actively responded to the challenges of the marketplace and the demands of our customers.

Our decision to enter the MRI market was initially a relatively rudimentary one, in so far as Imaging Solutions has historically been an accessories focused supplier. Accordingly, our initial offering focused specifically on marketing packaged MRI accessories.

More recently and again in response to market and customer demand for single source supply / turn-key solutions, Imaging Solutions ventured into providing the market with high-quality aluminium constructed modular designed RF cages. This has proved to be enormously effective in terms of delivering increased value to our customers while also providing the embedded efficiencies of single source supply. The MRI modality market in ANZ is continuing to experience explosive growth and Imaging Solutions has again responded by expanding our portfolio with high-end MRI technology products including MRI fluid delivery, patient monitoring systems and environmental relaxation products.

The resulting business model developed through this journey has resulted in the creation of a unique and highly competitive product /services business platform. Our unique single source supply model means that with Imaging Solutions, you can start at the planning stage with an empty host room and move through to a turn-key fully operational facility through a single point of contact (excluding the modality supplier). This saves time, money, and resources.

Australian Reference Sites

- International reference sites available on request.
- Install base exceeds 1,000 sites globally,



The World's Market Leading MRI Accessory Brands



SIEMENS

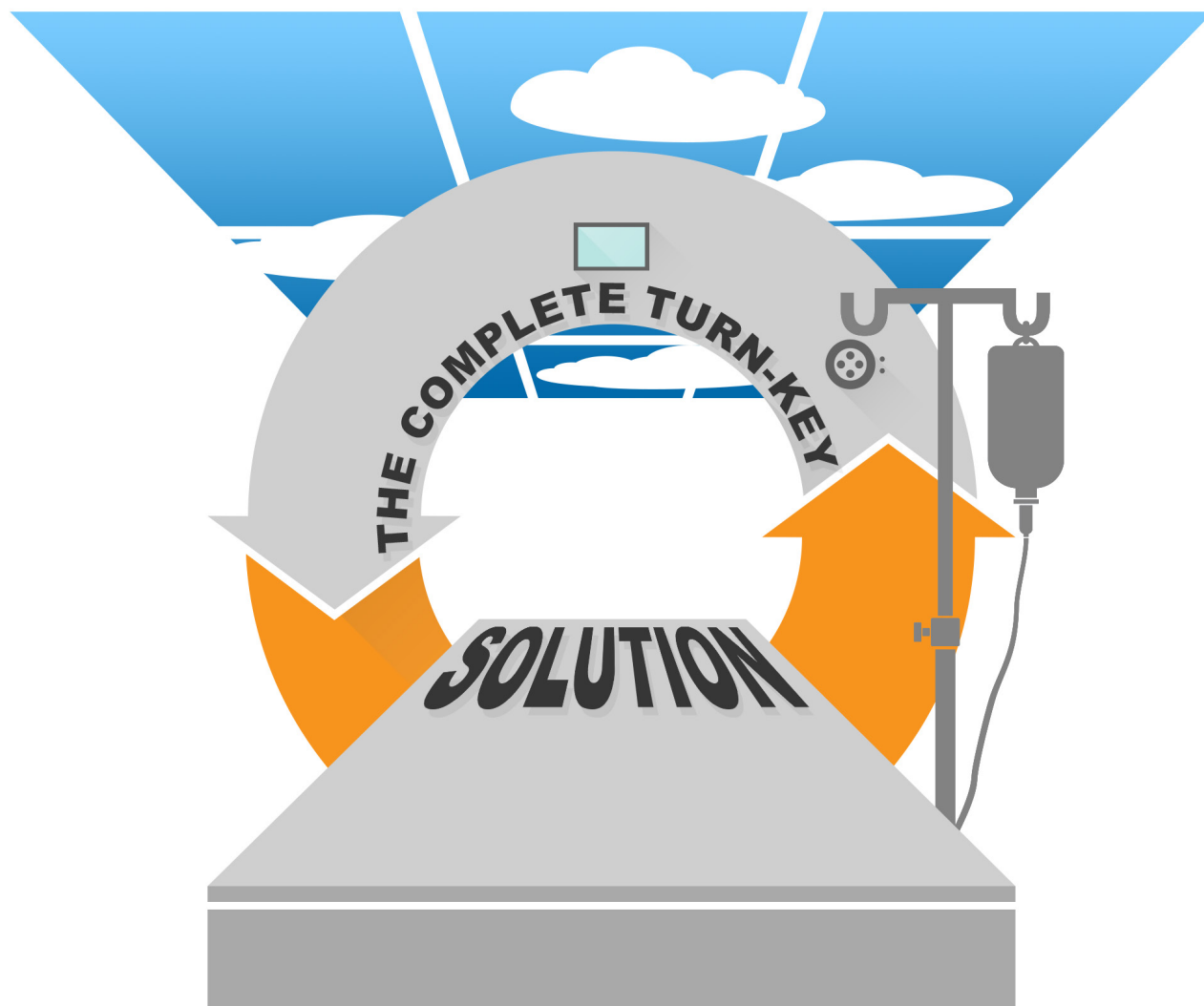
TOSHIBA

PHILIPS



Full Range, Full Service

Australasia's largest turn-key range of MRI RF cage design and construction related products and services. Our single source supply platform includes construction, engineering, design, project management, planning, testing and accessories.



1
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Site and Host Room Audit, Review and Planning

With builders, engineers, planners and draftsmen at the ready, Imaging Solutions is your one stop shop for new construction projects. We have access to everything you need to open a new practice or add an additional service to your existing practice.



2
↓

Project Management Team Development

From the first stages of planning through to hand over, Imaging Solutions is with you all the way. Let us manage the entire project for ultimate peace of mind.



3

RF Cage Construction

The Imaging Solutions RF cage is strong, simple and easy to install. Typically the installation timeline for the RF cage is 4-5 days followed by a further 5 days to fit out the interior of the RF room prior to magnet delivery and thus expediting the overall project installation timeline.



4

RF Cage Integrity Testing for Compliance when Initially Installed

Imaging Solutions have developed a highly sophisticated and well resourced RF Test and report capability. Using state-of-the-art RF Test equipment we are able to perform and report on all RF frequencies required by the various OEM manufacturers. Every RF cage installed by Imaging Solutions undergoes two batteries of RF tests.



5

Plant Equipment

Chillers, CRACs, ACs, and Installation and Commissioning

Imaging Solutions has acquired Aqua Cooler, Australia's leading manufacturer of industrial chiller solutions. This step towards a fully vertically integrated business model gives you access to world-class products and services without the overhead of engaging multiple suppliers.

Imaging Solutions has partnered with Aqua Cooler to bring you the absolute best in MRI room cooling. Being an expert in healthcare cooling for over 70 years, they have experience working with all major equipment vendors and have innovated designs which have been adopted as a standard practice in the industry. Aqua Cooler offers the only truly diverse solution to your chiller and cooling requirements at the local level.

6

Internal Fit Out

Not unlike the building and installation of the cage itself the internal lining or fit out of a RF cage is a complex and meticulous process given the multitude of technical issues at play. Specialist acoustic sound/noise attenuation linings, aesthetic ceiling and wall treatments, multi function lighting designs and systems, the inclusion of exhaust and AC systems, the provision of ceiling tile isolation measures and a raft of other variables may be involved in ensuring that RF integrity of the room. Specialist knowledge and expertise are required throughout the room lining process to ensure the RF integrity of the enclosure is not compromised in any way.



7

Magnet Delivery

Due to the ever changing geodemographic nature of our cities and communities, countless variables are required to allow for the provision of MRI services in a variety of building locations and circumstances. Imaging Solutions RF Cages offer the unique ability to open and close the RF Cage for magnet delivery allowing not only faster installations, but future proofing your investment.



8

RF Cage Integrity Testing for Compliance following Magnet Delivery

One is performed when the RF cage is initially installed and is an empty shell if you like and another is performed once the magnet is delivered after the RF cage has been opened to accept delivery of the magnet and reclosed.

Detailed test reports and compliance certification are provided at each step to ensure the integrity of the RF shield not only meets but also exceeds the manufacturers requirements.

9

MRI Equipment and Accessories

Imaging Solutions has the complete range of leading products from leading brands for your MRI suite, covering all areas including: Patient Monitoring, Patient Fluid Delivery and MRI Safety.



10

Patient Relaxation

Our patient relaxation range works together or individually to create an environment which fosters positive emotions for patients and staff, reducing stress and anxiety during Imaging procedures.



11

Project Handover

On the completion of each project the Imaging Solutions project manager will meet all stakeholders on site and review and confirm the acceptance that all works conducted within the scope of works agreed has been completed to specification required. This handover process is documented and a formal completion sign off is provided to our customer.

RF Cage Design

Project Planning and Management

Construction

Mechanical Services

Testing and Compliance

Turn-Key Solutions

Patient Relaxation

Room Themes

Virtual Windows

Virtual Skylights

Scanner Covers

Projections

MRI Compatible Equipment

Fluid and Dosage Systems

Patient Monitoring

MRI Safety

Displays

Patient Transport

Phantoms

RF Cage Chiller Solutions



AQUA CHILLER

Aqua Chiller is an internationally-recognised brand of process chillers designed and marketed by Aqua Cooler. Aqua Chiller offers a host of products and solutions to the market as well as a resource-packed aftermarket service. With over 50 years in refrigeration and an intimate understanding of our customer's process cooling needs, allow us to provide unparalleled level of specialised aftermarket service.



Introducing Aqua Cooler's Premium Chiller Range; using in-house engineered plans and an advanced PCB controller the Gladiator Plus chiller is designed in Australia, for Australian conditions.

The Gladiator Plus Range of chillers is backed by 50 years of history and experience. Aqua Cooler has supplied and installed over 5,500 Gladiator Plus chillers internationally.

Features

- A high ambient temperature operation of up to 46°C with R134a.
- Advanced PCB controller with Australian designed software allows advanced control - Webpage interface via IP, HLI capability RS485, Modbus, Bacnet, and more.
- Extensive parameter settings to suit a variety of applications.
- Advanced safety controls will ensure your chiller remains safe. Features such as phase protection, thermal overload, low flow protection, water freeze protection and more as standard.
- Improved data logging via USB or webpage download.
- Variable speed drive options ensure your Gladiator Plus Chiller is only working as hard as it needs to.
- Open or closed loop pipework options to suit the requirements of the process.
- Environmentally-friendly refrigerant options of R134a or R407c.
- High efficiency scroll and screw compressors made by industry leading brands.

Benefits

- Using the advanced PCB, multi-chiller control options are available that allow benefits such as redundancy control, remote start / stop and performance monitoring.
- Your Aqua Chiller Gladiator Plus Series industrial process chiller can be tailored to your unique requirements ensuring you have the most effective and efficient solution to your project. Talk to us about any required customisations.
- Wide operating limits means Aqua Chiller's Gladiator Plus Series can be used in a broad range of situations, particularly important for the harsh Australian climate.
- Internal buffer tanks ensure that temperature remains more consistent under varying loads.
- Rely on over 50 years of industry experience and over 5,500 Gladiator Plus Chillers to be sure you're making the right investment.

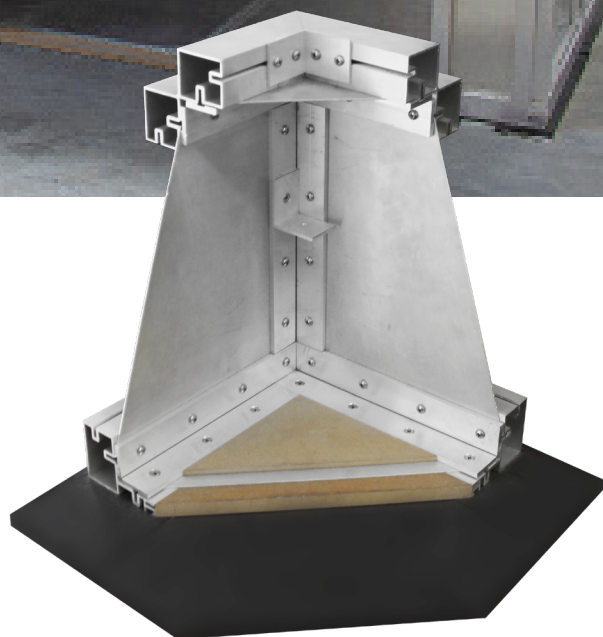


Our Rigid Modular Aluminium Design

At Imaging Solutions, we pride ourselves on the quality of our products and for the absolute best in the industry we use high grade aluminium materials to construct our unique modular cages. This provides the cages with inherent strength, flexibility and longevity.

Sections of our RF cage structure, with exception of the floor, can be easily dismantled and reinstalled without compromising the integrity of the cage. Future upgrades, such as magnet replacements, can be facilitated with comparative ease as a result of the product's modular design.

High strength, low weight aluminium extrusions and sheets make our RF cages ideally suited to minimise the loading weight of the room while the structure remains rigid, robust and completely self-supporting. The mechanical pressure fit joints confirm the cage exceeds the minimum required attenuation levels of all leading equipment manufacturers. The RF attenuation performance integrity is key to ensuring optimum diagnostic image quality. The construction process allows for easy introduction of additional wave guides as well as alterations when the equipment is upgraded.



The magnetic shielding contains the magnetic fringe field within the room, minimising risk to staff and patients and to avoid disturbances to sensitive medical equipment. This type of shielding is achieved using low carbon silicon steel or another suitable ferrous material as specified by the OEM. However, the extent and thickness of magnetic shielding involves detailed calculations based on the strength and position of the magnet within a room, the size of the room and an assessment of any potential outside interference. Reports are available from the equipment manufacturers and are calculated on a case-by-case basis.

General Specifications

An Imaging Solutions MRI RF cage is constructed from high-grade aluminium. The specialist design of the individual components which makes up the shielding structure provides a unique modular aluminium system.

The self-supporting aluminium structure is designed, manufactured and installed under strict quality control measures. Each cage is manufactured and custom designed to suit the host room, local site conditions and requirements. The rigid modular construction of Imaging Solutions RF cages means they can be easily adapted to overcome any unexpected modifications size and specification on site. Installation and retrofitting at the time of commissioning or retrofitting of additional electrical filters or wave guides and ancillary components is simple and does not affect the compliance and integrity of the RF attenuation offered by the cage.

The finished product easily surpasses the attenuation levels specified by all major equipment manufacturers. Our designs are regularly revised and updated as new products and are introduced into the market place.

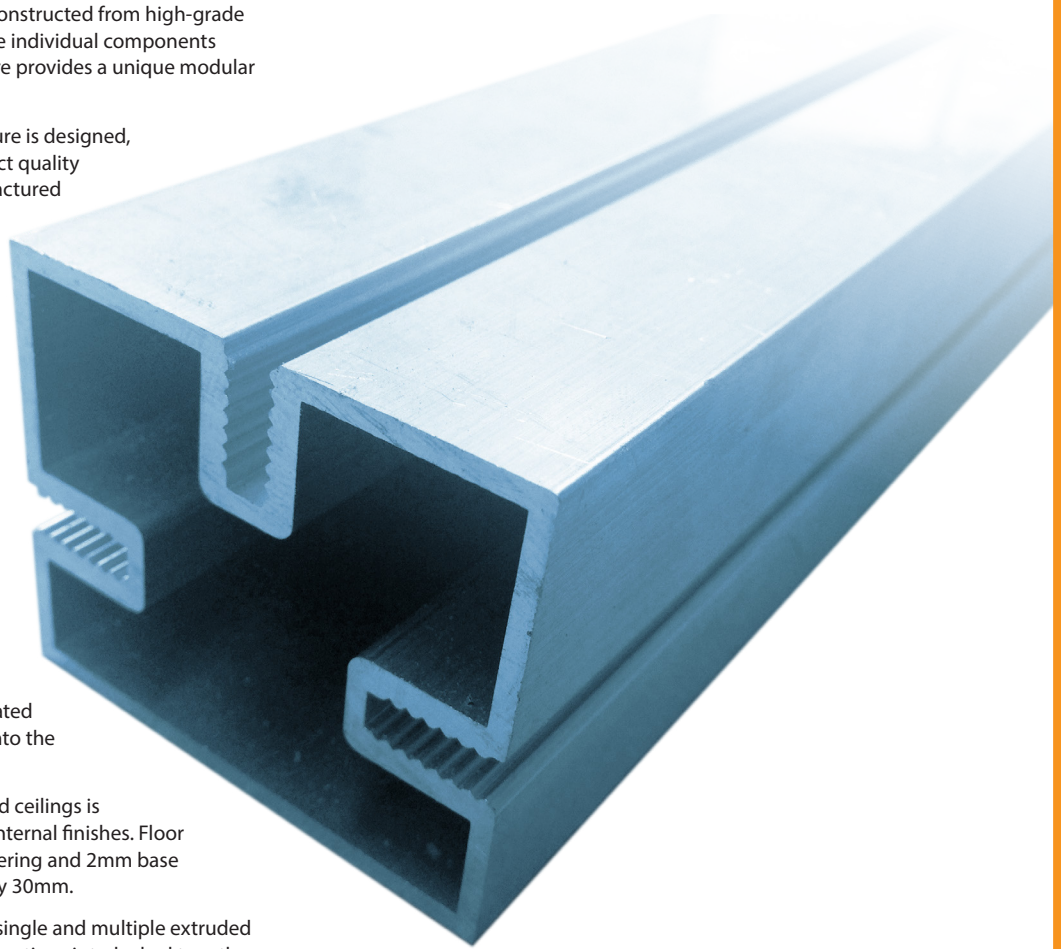
The standard thickness of the walls and ceilings is approximately 50mm, excluding any internal finishes. Floor thickness, including the final floor covering and 2mm base insulation membrane, is approximately 30mm.

Our cage is produced from a series of single and multiple extruded certified, high-grade aluminium tube sections interlocked together to form a rigid frame which stands on an insulated membrane. The interlaced floor panels are laid with a self-levelling adhesive compound to infill gaps between floor and frame, therefore providing a firm mounting platform for the magnet.

Additional supporting pads for the magnet can be introduced if required by the equipment vendor. It can also be strengthened to meet the load bearing requirements of any size magnet and can incorporate in-floor cable ducts if specified.

The internal surface of the self-supporting frame is then lined with 1.6mm certified, high-grade aluminium sheet, the edges of which are buffed, cleaned and treated with an electrical conductive paste and face fixed with an extruded aluminium cover strip via 304 grade stainless-steel 10 gauge screws at 70mm spacings.

This unique system gives a double overlap of the material at each panel joint for the maximum level of performance, attenuation integrity and electrical conductivity. This construction process eliminates any problems of structural stressing and flexing through building movement or varying coefficients of expansion. It also



eliminates the inherent weakness of timber framework, thinner shielding materials and the problems associated with other forms of clamping mechanisms.

NB: See specifications for minimum floor level variance / tolerance per technical reference manual guidelines.

Our modular construction design ensures an easily removed and re-fitting of wall/ceiling panels to allow magnet access during initial installation and in the event of an equipment upgrade. Sound insulation can be incorporated into the framework of the walls during assembly in addition to our standard acoustic internal lining.



A Revolutionary Copper Design

Imaging Solutions is proud to introduce our newest RF shielding solution, copper cages. Our copper cages are manufactured to the highest standard using high quality materials and excellent craftsmanship. The structure is uniquely modular and can be dismantled and reinstalled without compromising the integrity of the cage. Panels are bolted together and can be removed for magnet entry.

Timber frames are copper wrapped and bolted together in sections, along with the soldered floating floor. Our copper cages also come with Himmel insulated sound-proof panels.

We pride ourselves on our ability to cater to every possible situation, whether it is modifying an existing copper cage or building for an entirely new site, Imaging Solutions has you covered.



Our modular construction design ensures removable and re-fitting of wall/ceiling panels to allow magnet access during initial installation and in the event of an equipment upgrade. Sound insulation can be incorporated into the framework of the walls during assembly in addition to our standard acoustic internal lining.



Construction

Competition has arrived in the form of Imaging Solutions

The MRI speciality has been undergoing rapid change during the last 5 years which is continuing to intensify. The range of diagnostic applications developed for the MRI environment has exponentially increased and continues to grow rapidly. The medical market today is sensitive and accordingly very aware of radiation dose issues associated with CT and general X-Ray. Accordingly, both public and private radiology centres are moving away from traditional radiation dose dependent and intensive solutions.

Historically, the MRI RF cage market was dominated by a very select group who provided the market with limited choice and due to a lack of competition, prices were astronomically high in comparison to today's far more realistic and affordable project costs. Imaging Solutions has played no small part in bringing competitive tension to the market and delivering the significant descending pressure on pricing which has halved and in some cases reduced RF cage costs by a third of what was previously charged. The only thing that has changed is, competition has arrived.

Save time and money with a modular design

The Imaging Solutions RF cage is strong, simple and easy to install. Typically, the installation timeline for the RF cage is 4-5 days followed by a further 5 days to fit out the interior of the RF room. This short, sharp, clinically precise and efficient process means it's possible to take delivery of your new magnet within the same week. Once the magnet is safely installed, a day is required for the RF cage closure and approximately 5 days for the internal fit out or lining, lighting and electrical. This means the entire construction process can be collapsed down into a compressed 2-week period. This also means disruption to your productivity and the time required to return to normality in terms of workflow and patient throughput are minimised.



RF Cage being constructed



Future Proofing

With rapidly changing demographics and the fast pace of technology development, a modular cage makes sense

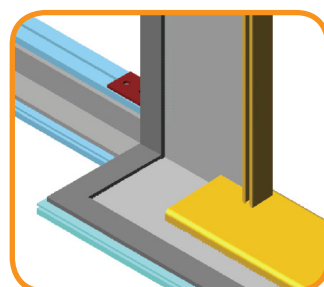
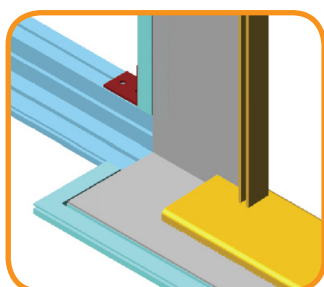
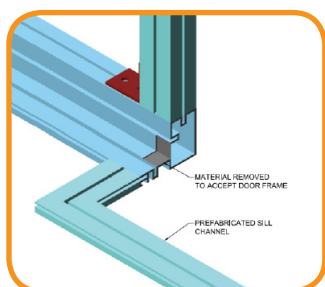
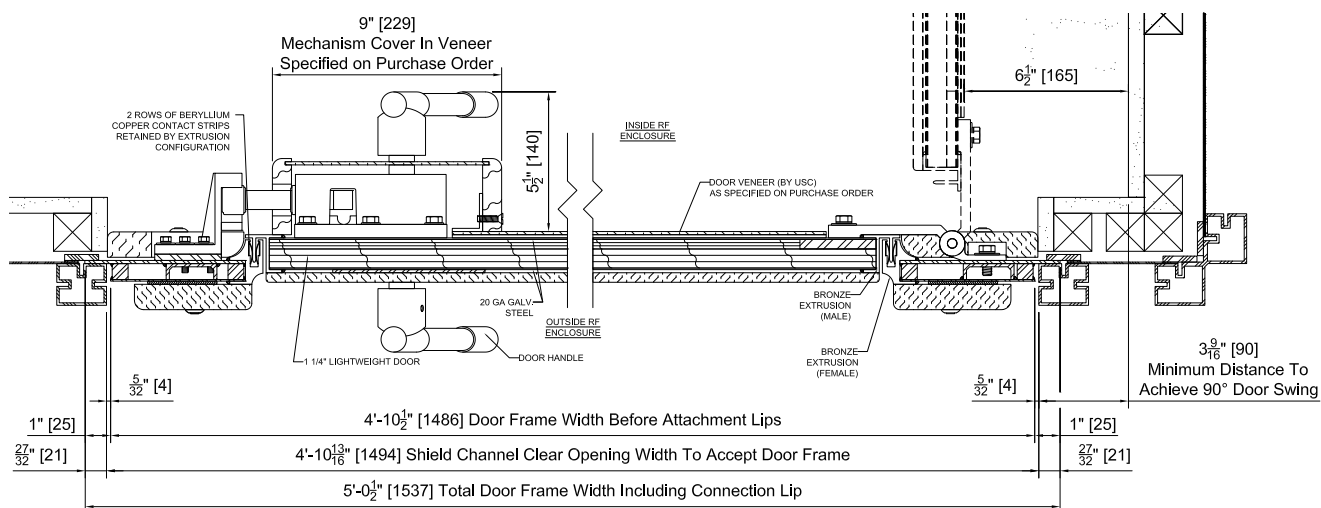
When you select a Imaging Solutions modular RF cage you are not only investing in a high strength self supporting structure manufactured of durable high grade certified 1.6 mm thickness aluminum sheet and extrusion. Our design embraces advanced inbuilt design features which future proof your investment. The modular design of the Imaging Solutions' product allows optimum flexibility in terms of allowing future change outs as MRI technology advances.

The unique modular design of the product allows wall or ceiling panels to be easily removed to facilitate the removal of end of life magnets and their replacement with a minimum of fuss and most importantly comparatively minor cost. In as little time as a few days a change out can occur and the RF cage will be restored with its full integrity intact. In comparison other RF cage designs and construction methodologies mean the RF cages integrity and substantial elements of their structure are permanently damaged in the change over process.

Its important also to consider the miss match which inevitably occurs with traditional RF cages constructed of comparatively thin copper sheet, adhesive strips and staples is disturbed with replacement of new patches and joints can result in inconsistent continuity and longevity or service life. With The Imaging Solutions option the joints are mechanical air pressure fit seals along all joints and screw tightened for long term reliability.



Typical Floor Section



Advanced Cooling Solutions

Imaging Solutions has partnered with Aqua Cooler to bring you the absolute best in MRI room cooling. Aqua Cooler has been a manufacturer of industrial chillers for over 50 years. Together with Imaging Solutions, Aqua Cooler will be driving the MRI chiller industry forward with innovation and energy and giving you access to world-class products and support.

Every solution is tailored to your requirements for: redundancy, noise, foot print, and budget. Don't accept an off-the-shelf design and don't settle for anything less than the best.

Key Features

We can tailor a solution for your project that offers you the following key features:



Improved equipment and operational up time



Early notification of performance issues via SMS and remote monitoring



Reduced operation noise



Reduced repair costs in the event of a failure and shorter repair times



Improved power savings through unique chiller staging design



Risk management plan built into design



Improved environmental control within the MRI scanning room via variable air volume control



Complete redundancy allowing operation to continue during chiller repair

Increased Up Time

Cooling systems contain numerous mechanical components. No matter how reliable a system is, there is always the chance of failure. The most common cause of a fault is usually an environmental factor such as a power surge. A loss in cooling capacity can result in a significant financial burden.

- Excess helium lost needs to be replaced
- Referred patients may be rebooked elsewhere
- Technical staff are unable to work during down time

Aqua Cooler can provide a redundant system with redundant and separate compressors, a fault in a single compressor will not effect operational status of your scanner.

More importantly, compressor repair can occur without interruption of service due to multiple compressors located in separate locations and repair is often quicker and cheaper.

Stable Scan Room Temperature and Humidity Control

A variable air volume control system can monitor the temperature of the return air flow and adjusts the supply air flow to accurately maintain desired temperature within the scan room. This provides the patient with a stable, comfortable temperature during their procedures.

It is vital to keep the humidity of a scan room to the MRI equipment vendor's specifications. Any deviation from these specifications can cause damage to the precision instruments on the scanner, and replacing these parts can be expensive. A standard consumer-grade air conditioning unit is not an acceptable solution for cooling your scan room. Aqua Cooler' CRAC units control the humidity to ensure compliance with manufacturers' specifications.

Superior Aftermarket Service

Imaging Solutions and Aqua Cooler together, provide an unmatched level of aftermarket support. Our secret is passion. No other company shares our passion to provide the best products, services, and customer satisfaction.

All our cooling system components are supplied with a 24/7, 2 hour response warranty for the first 12 months. Moreover, the cooling system will provide us with notifications of faults before your technical staff notice an issue, and we can immediately become proactive to correct the situation. This world-class support can be extended after the first 12 months for continued peace of mind.

Work Directly with the Best



Imaging Solutions' acquisition of Aqua Cooler offers you access to a completely vertically integrated suite of products and services not available anywhere else in the world. Aqua Cooler is Australia's largest and leading manufacturer of industrial water chillers and this product range is now available as part of a full turn-key RF cage solution.

Access options to world market leader chiller brands

Even with the market leading components from Aqua Cooler at your finger tips, there may be reasons why you require chilling systems or parts from other suppliers. Whether you need to integrate with or



Proven Benefits

Aqua Cooler has implemented MRI chiller systems at numerous medical practices across Australasia with an outstanding record of reliability and performance.

Aqua Cooler can design a water cooling system that is only required to operate from 15% to 50% of cooling capacity, 99% of the operating time. This provides clients with an outstanding advantage, reduced energy consumption while still meeting 100% scanning time.

Aqua Cooler chillers operate on a non-blend refrigerant with dual refrigerant circuits and on the rare occasion the chiller refrigerant circuit needs repairing, the cost of the repair is low with minimised down time as the remaining refrigerant is able to be reused. The dual refrigerant circuit often results in the chiller achieving 100% up time.

Patient comfort has been a great success with MRI operators advising via direct feedback that the temperature control system is simple-to-use and its self-monitoring nature requires very little input. As a result, the operator is able to focus more on the patient.

Imaging Solutions is experienced in the methodology and operations of medical practices and understanding their business model. In conjunction with Aqua Cooler, Imaging Solutions operates to ensure clients' goals can be achieved each time, every time. This has been recognised by the majority of MRI manufacturers and Imaging Solutions is now a market leader in the MRI RF cage industry.

National Network of Aftermarket Service Providers

Through Aqua Cooler, Imaging Solutions' customers have access to a national network of aftermarket service providers ready to assist with breakdowns, preventative maintenance and installations. When a problem occurs, you only have to make one call, that's all.



Quad Compressor Design

Imaging Solutions, in partnership with Aqua Cooler, offers a quad compressor system with hot gas bypass that enables the entire system to balance the load on the compressors instead of relying on an on/off state provided by conventional systems. Not only does this provide redundant output in the case of a failure but offers numerous benefits over the conventional single compressor design.

Quad Compressor Design Benefits

- Increased system stability
- Improved power efficiency
- Reduced noise due to less compressor starts
- More stable temperature
- Extends compressor life by reducing wear

Conventional Cooling System

A conventional cooling system has a binary state; on or off. When the temperature gets too high and the compressor activates there is a spike in power consumption. This is followed by a rapid temperature drop due to the compressor working at full capacity (typically 80kW). The temperature then gets too low and the compressor shuts off. This cycle repeats constantly to achieve the desired temperature output.

This is not ideal as it leads to a varying temperature, lots of noise from the compressor starting, and unnecessary wear on the compressor's mechanical components. To top it off the cyclical action of the compressor uses excessive power consumption.

Quad Compressor Cooling System

The quad compressor cooling system offers 9 different levels of cooling. What this means is that instead of being on or off, the system can operate at a range of output levels.

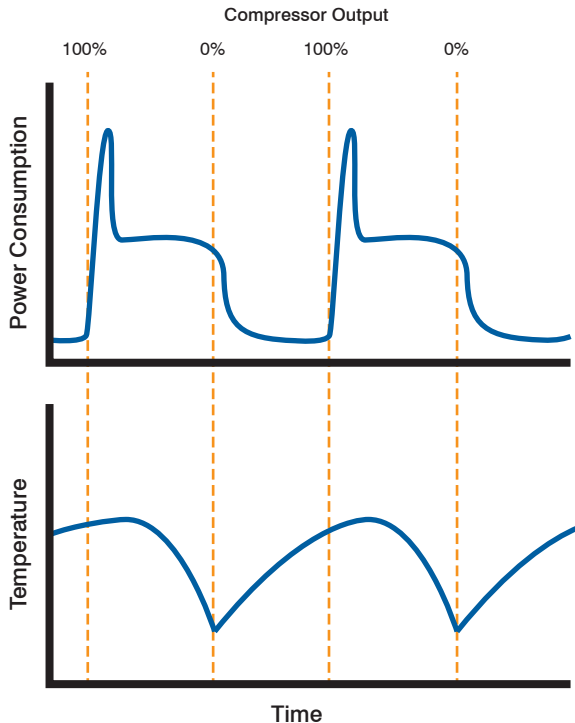
As you can see below, this leads to less compressor on/off cycles and a more stable output of temperature. Overall the power consumption is also reduced as the system can operate at lower output levels for longer periods of time, minimising the spike of power consumption when the compressor starts up.

The entire system is quieter with less compressor cycling and a more stable output of noise makes it less noticeable.

Single Compressor

2 Output States

0% 100%

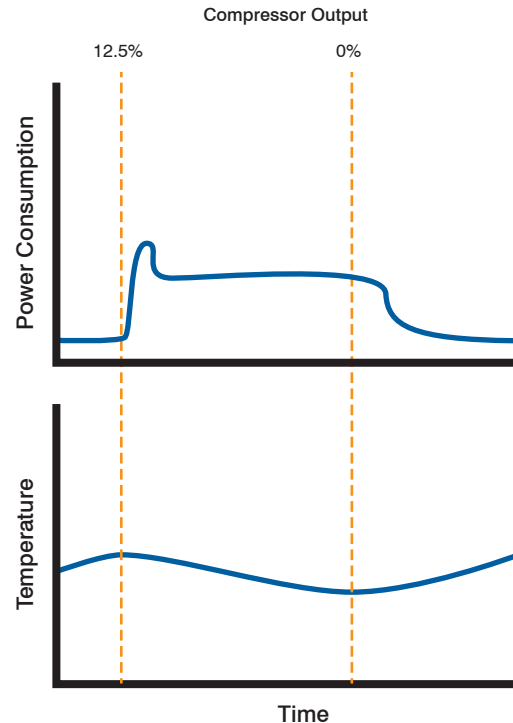
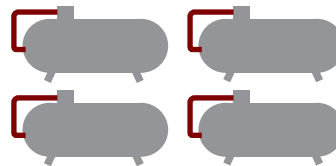


- High power consumption
- Varying temperature output
- High cycle frequency resulting in noise

Quad Compressor + Hot Gas Bypass

9 Output States

0% 12.5% 25%
37.5% 50% 62.5%
75% 87.5% 100%



- Lower power consumption
- Stable temperature output
- Low frequency compressor cycling (lower noise)

A Direct Comparison

No matter how you make a comparison, standard chillers simply do not stack up to an Aqua Cooler solution. Aqua Cooler chillers offer superior design and reliability and deliver greater direct and indirect benefits to users.

Currently standard chillers are unable to scale with the load output of the MRI (e.g 7kw-60kw), therefore the chiller short cycles causing the single compressor to eventually fail. When this occurs, the MRI is unable to scan. The short cycling also increases energy consumption due to the high number of compressor starts.

With these common types of failures, the frustration of clients is often clearly evident as they need to deal with the MRI's incapability to scan while waiting for the chiller to be repaired. The loss on helium from the MRI can result in very high repair costs and when you add to this extra high energy bills due to the short cycling of the chiller, the financial impact of such a failure.

Unfortunately, these costs are likely to increase with the rising charges from energy re-sellers.

	Quad Compressor System	Conventional Cooling System
Basic Information	<ul style="list-style-type: none"> Chiller is designed to match the requirements of the MRI operations. Chiller adjusts cooling capacity to match MRI heat load. 	<ul style="list-style-type: none"> Standard chiller designed for basic industrial needs design to operate on fixed heat loads.
Compressor/s	Dual Compressor Circuit <ul style="list-style-type: none"> One variable speed and one fixed speed. Dual circuit system minimises refrigerant circuit charge. Refrigerant pricing is estimated to exceed over \$100.00/kg, minimising refrigerant charge size is essential. In the event of a fault on one refrigerant circuit, the chiller can still operate at 50% capacity enabling MRI scanning to continue. 	Single Fixed Speed Compressor <ul style="list-style-type: none"> Start/Stop type system causes compressor to short cycle when MRI is not in use. Short cycling promotes compressor failure. Single circuit system has no cooling available when system faults. Refrigerant pricing is estimated to exceed over \$100.00/kg, minimising refrigerant charge size is essential.
Load Scaling	Yes (6 – 36kw) <ul style="list-style-type: none"> Maximises energy savings where possible as chiller system matches the MRI load. 	No (Fixed Speed) <ul style="list-style-type: none"> High energy usage due to start stop operation when MRI is not in use.
Refrigerant Circuits	8kg refrigerant circuit (x2) <ul style="list-style-type: none"> Reduced refrigerant charge per system, therefore replacement cost of refrigerant charge is reduced. Refrigerant is not a blend, enabling remaining refrigerant charge to be reused. New low cost replacement refrigerant planned to replace R134a. in the future. 	16kg refrigerant circuit (x1) <ul style="list-style-type: none"> Large single blend refrigerant charge Requires complete refrigerant charge replacement if the system has a small (15%) refrigerant leak.
Refrigerant Type	R134a (Non-blend type refrigerant)	R407c (Blend type refrigerant)
Controls	Enables web interface and remote digital	Enables web interface and remote digital

RF Cage Doors

High Performance Knife-Edge Door Range with Superior RF Attenuating Properties

An RF cage is only as effective as its weakest penetration point. Imaging Solutions has partnered with a US based research and engineering company to develop doors that provide attenuation characteristics equal to that of the enclosure, and are mechanically and aesthetically pleasing.



Type RCM-154

The Type RCM-154 shielded door utilizes a brass extrusion mounted on the periphery of the door frame. This extrusion houses two rows of "fingers" which are concealed from accidental damage. The door leaf has a brass 'knife-edge' extrusion at the perimeter which mates with the fingers within the frame when the door is closed. This design results in a damage-free closure seal, with highly efficient prevention of RFI/EMI leakage.

Type RCM-254

The Type RCM-254, or the double knife design, utilizes four rows of fingers to improve the magnetic and plane wave shielding attenuation. USC enclosure doors are equipped with a minimum of a 3-point latching mechanism for tight RFI/EMI secure closing. Bearing surfaces, rollers and door cams are of case-hardened tool steel designed to provide years of trouble-free operation with no loss of attenuation capability as a result of friction and wear.

Our door incorporates a minimum of three door hinges. Each hinge has both radial and thrust bearings to minimize friction and wear on the hinge pins resulting from the weight of the door. There is an adjustment in the hinge both in the horizontal and vertical direction. Our standard single-personnel-door provides a 3 ft. x 7 ft. clear opening and our double door provides a 6 ft. x 7 ft. clear opening. However, all doors can be custom fabricated to the sizes requested.



Clear-View Door



RCM-154



RCM-254



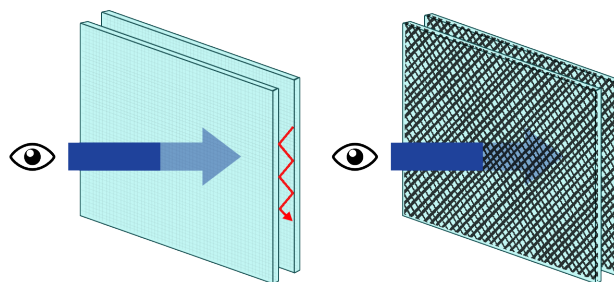
Observation Windows

Claimed to be the clearest observation window available in the market today, Imaging Solutions windows consist of two pieces of glass, each containing a layer of fine (in fact almost invisible to the eye) mesh embedded into the glass itself and combined with an anti-reflective coating. The two pieces of glass are glazed and laminated to form a complete window unit which is bonded, sealed and terminated within a welded aluminium frame for fitting into the prepared opening.

The end result means not only can scanner operators see patients more clearly but also importantly, patients do not feel as isolated in what is already, for many, a relatively unfamiliar environment.

The space between the two glass panels gives enhanced attenuation and is designed to eliminate moiré fringes. These windows are constructed with an aluminium facing which can be finished in a choice of wood veneers, laminates etc. and matching timber lippings.

Our window sizes are 1200 mm x 900 mm, 1500 mm x 900 mm (Standard), up to a maximum size of 1800 mm x 1000 mm.



Imaging Solutions' RF Observation Glass

Competitors' RF Glass

Wall Linings

Imaging Solutions offer a comprehensive selection of wall linings including attenuated sound paneling and gyprock. Acoustic wall, baffle, and diffuser systems effectively control unwanted noise.

Various brands of materials available offer varying noise attenuating/ reducing properties. These are available in a wide selection of colours to suit your interior visual preferences.

The key feature of our engineered wall systems is an acoustical inner core (either mineral fiber or fiberglass) covered with your choice of woven fabric, composed fabric or easy-care vinyl.

Typically acoustic wall panels can absorb 50% to 90% of the sound striking the surface – 3 to 6 times the sound absorption of fabric-covered gypsum board typically used by other suppliers.

Apart from working to reduce or eliminate ambient noise within the room the use of acoustic materials also serves to minimize sound transmission from space to space for increased speech privacy.



Acoustic Ceiling Tiles

In all types of spaces, choosing the right acoustical solutions will enhance the end user's needs and overall comfort. With acoustics, you need to determine whether intelligibility, concentration or confidentiality is required? We can help you find the right acoustic solution for your space.

You can choose from a wide portfolio of Armstrong products including standard solutions through to island ceilings. Armstrong acoustical ceilings reduce noise levels in interior spaces, allowing for an optimum balance of high performance sound absorption and room to room sound attenuation to maximise / minimise speech intelligibility as appropriate.



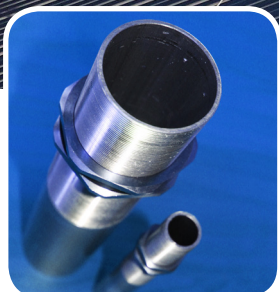
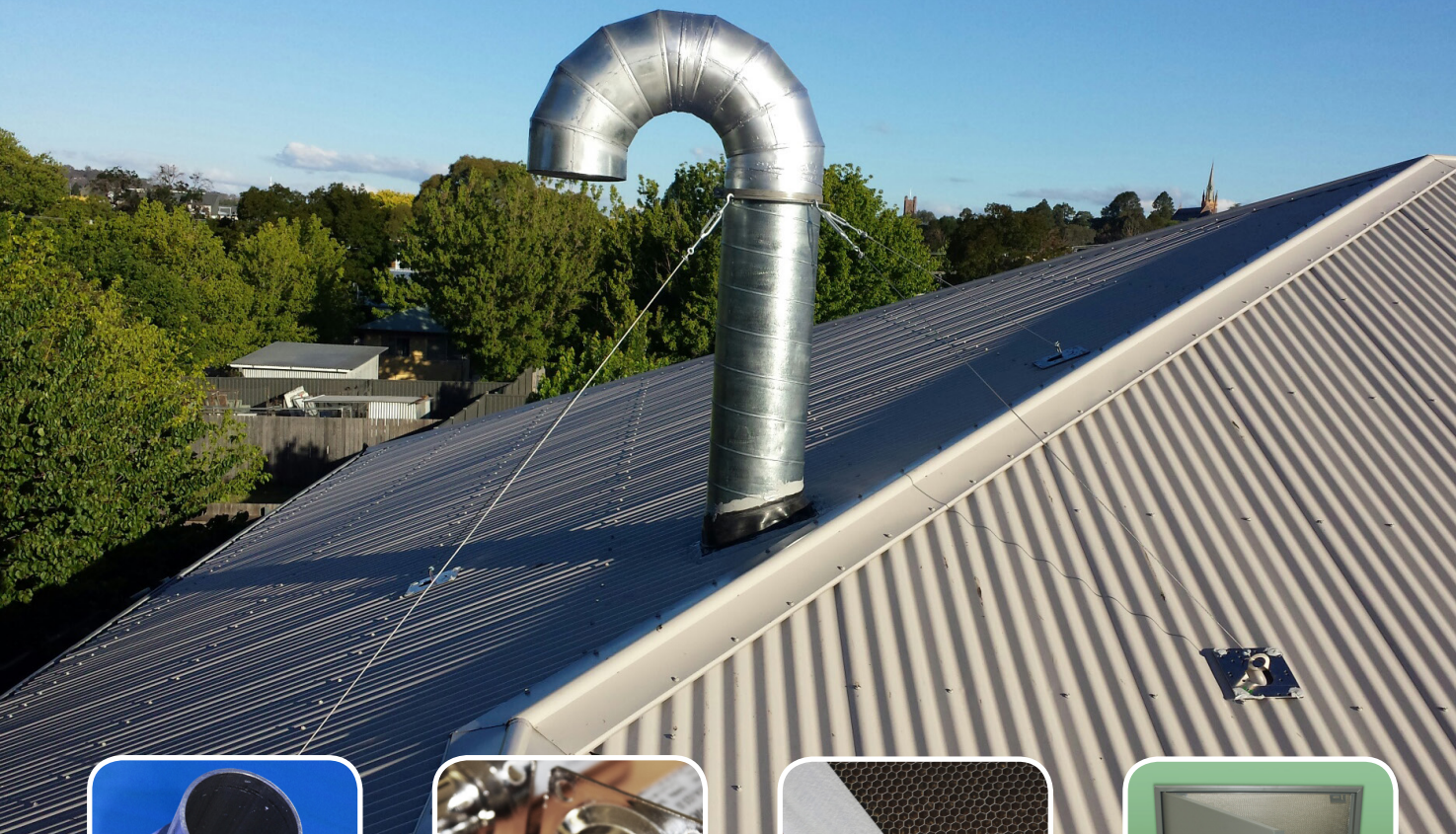
Noise Control and Insulation

In addition to the selection utilisation of noise attenuating wall and ceiling materials Imaging Solutions also incorporates additional noise control insulation to reduce and control noise transfer in wall and ceiling cavities.

Autex blankets have a range of 100% polyester acoustic insulation products designed to improve the acoustic performance of partition walls and ceiling systems. The blankets can be used in metal and timber stud partition walls and as an acoustic ceiling overlay for reducing airborne sound transfer. The use of Autex blankets reduce resonating noise in the construction cavity there by increasing the sound transmission loss of the construction system. The Building Code of Australia (BCA) sets out minimum performance ratings for inter-tenancy walls and floor-ceiling construction.

Particularly in MRI installations noise containment is a key consideration.





Auxillary Components

Each MRI vendor requires individual auxillary components to be installed to meet the customers site. Items such as a Quench Pipe, Filter/Pen Panel, Assorted Waveguides, Medical Gases waveguides and Electrical Filters are mounted within the RF cage lining and positioned to suit site requirements.

Quench Pipes

Quench Pipes are made from stainless steel tube with the purpose of venting the Helium liquid/gas within the magnet to atmosphere and are designed and installed after consultation with all parties involved to produce a product that meets strict site specifications.

Filter /Pen Panels

These panels are dependant on the MRI vendor and are used to pass all interconnections between the magnet and the external environment. A special adaptor plate is mounted within the RF Cage lining to suit these individual panels supplied by the vendor.

Assorted Waveguides

Both air-conditioning and pressure relief wave guides are constructed of two layers of high grade aluminium honey comb material sealed into a support frame designed for mounting into RF cage panels ready for air conditioning duct adaption. These wave guides are positioned as required by the mechanical services contractor.

Electrical Filters

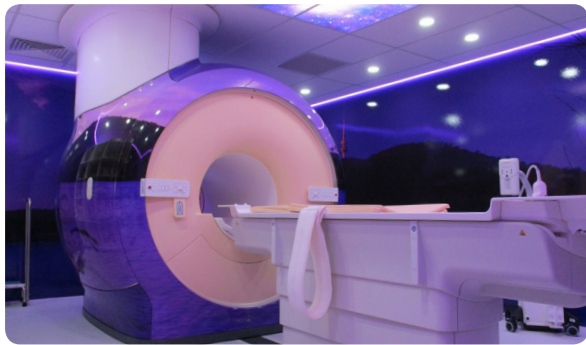
Housed within the RF cage paneling these electrical filters are required to pass all auxillary power and lighting to the internal workings the cage. Especially designed to handle the current loading of these circuits these filters are required in groups of pairs per electrical circuit.

Virtual Environments

Our mission is to create a better healthcare environment for patients, young and old; and to change the way people perceive and experience healing. Imaging Solutions is dedicated to achieving this with our range of Virtual Environment products.

Custom Solutions

Imaging Solutions can custom develop just about anything you can dream of. The only limitation is your imagination. Contact us today to discuss what we can do together.



Vista Coat is a range of high-quality self-adhesive vinyl products which are produced with high-resolution stunning visuals. Available as a Wall Wrap or Floor Wrap this product will stand the test of time and offer you a vibrant surface for years to come.



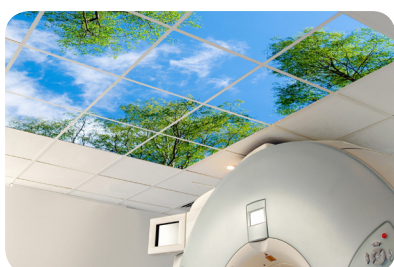
Cinema Skin projects videos and animations onto surfaces such as a CT or MRI scanner, adding a whole new level to the patient's experience. No other product gives you this level of flexibility by change between multiple adult and paediatric themes in seconds.



Show off your practice anywhere with Virtual Practice. This product sets you apart from competition, allowing you to display your practice in 360 degree panoramic views. It can even be loaded on to your corporate website for promotional purposes.



VIRTUALview



Bring some light and colour to your procedure and waiting rooms. With Virtual Skylights and Windows your patients can experience the view of a beautiful sunrise or a star-filled night in any room at any time of the day.



MOODlighting



Mood Lighting is a simple and effective way to change the entire feeling of a room. With LED strip lighting and down lighting you can set a room to any colour of the rainbow and even fade between theme.



SCANNERskin



Convert your clinical, stark looking medical equipment into works of art. Scanner Skin is a conformable self-adhesive vinyl that is coated to ensure longevity and a cleanable surface.

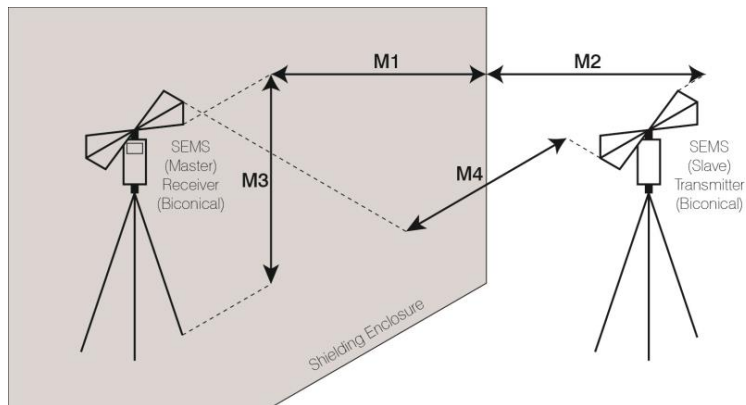
RF Testing

Aware of the advances in technology Imaging Solutions have, in conjunction with leading EMC analysts, developed their own in-house testing facility. Using highly sophisticated RF test equipment, our construction methods obtain attenuation levels at a wide range of frequencies as specified by OEM equipment manufacturers. These attenuation performance results are in excess of their current requirements.

In addition to conducting RF tests for our own cages we are always pleased to carry out independent tests on other sites and in mobile units.

Tests are conducted in accordance with IEEE Std 299-2006 - Standard Method for Measuring the Effectiveness of Electromagnetic Shielding Enclosures. Latest information can be obtained from our Technical Staff.

Once a RF cage is completed Imaging Solutions tests the installation for RF integrity. The tests are undertaken to meet individual OEM specifications. Multiple point testing is undertaken throughout the RF cage with an objective outcome of being completely insulated from outside RF signal or noise interference.



Distance Point	Distance Measurement
M1	1000mm
M2	1000mm
M3	1500mm
M4	500mm

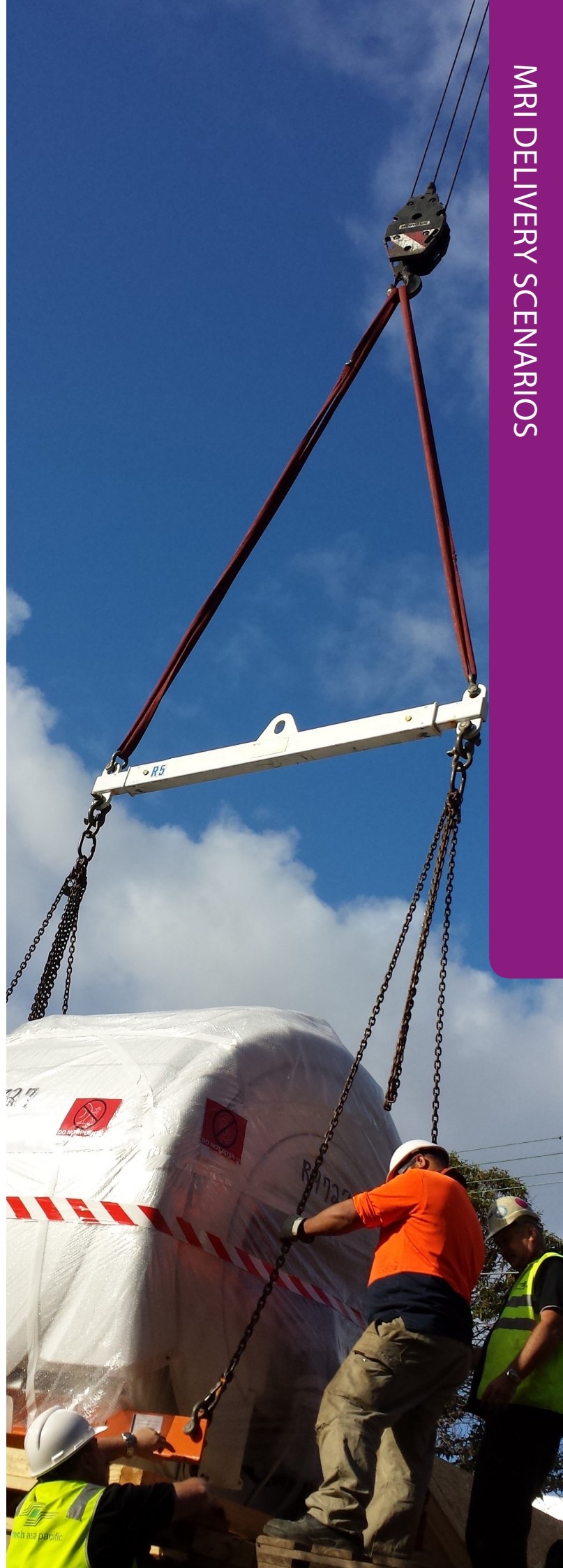


Typical MRI Delivery Scenarios

Due to the ever changing geodemographic nature of our cities and communities, countless variables are required to allow for the provision of MRI services in a variety of locations and circumstances.

These range from relatively easy installations at ground floor level with minimal access, to multi-story high rise installations requiring very specialised lifting and moving equipment and commensurate resource support.

Imaging Solutions' RF Cages are of a modular design that allows for either the wall or ceiling panels to be removed with relative ease enabling for installation and mounting of the MRI.



Advanced Chiller Monitoring Solutions



Save Money

Move from reactive refrigeration maintenance (breakdown maintenance) to Reliability Centered Maintenance (RCM) with monitoring and cut cost by up to 66% per year.



Avoid Outages

Costly outages are now a thing of the past! Our monitoring system lets you know the moment your refrigeration system needs attention, well before expensive repairs, spoilage and waste occur.



Find Leaks

Leaks happen. And are frequently found way too late. Replacing refrigerant is costly. With Our monitoring system you find leaks early – before they cause real trouble.



Works with any Aqua Chiller installation

Thanks to advances in technology, every Aqua Chiller installation, new or existing, can now be made smart.



It's like having a Fridgie on site 24/7

Refrigeration trouble frequently happens when no one is looking. Let's face it, you have better things to do. But what if modern technology could be applied to your refrigeration system? What if you could automate the monitoring of the entire system and have the power to know exactly what's going on, all the time. Now you can!

Our monitoring system is designed to be your on site refrigeration expert so you don't have to be. RCM works all the time, 24 hours a day, 7 days a week, 365 days a year. Now you will Know exactly what's going on.



Move to Reliability Centred Maintenance now!

Reactive Maintenance or Breakdown Maintenance - \$18/kw/yr



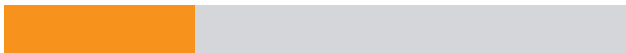
Reactive Maintenance - \$15/kw/yr



Predictive Maintenance - \$9/kw/yr



RCM - \$6/kw/yr



Savings on
Maintenance

66%

Elimination of
Breakdowns

75%

Monitor Vital Indicators

Now know exactly what's happening. Follow temperature, refrigerant pressures, cycle times, cycle frequency and power consumption down to fans and compressors. View real-time data as well as historical trends. Gain the power, insight and peace of mind that SMART refrigeration delivers.



Chilled Fluid Temperature

Know that your chiller is doing its job. See current and historical temperature trends.



Compressor & Fan Power

Learn when compressor or fans are working too hard or too little. Long before expensive repairs.



Flow Rate and Alarm Status

Know the status of your chiller water pump at all time and be immediately alerted to any problems that arise.



Ambient Temperature & Humidity

Is a hot or cold day affecting things? Are things too dry or too wet? Our monitoring system keeps tabs on that too.



Suction Pressure & Temperature

Track current and historical suction superheat levels to guard against flood-backs or compressor overheating.



Liquid Pressure & Temperature

Know liquid sub-cooling levels now and in the past. Keep a sharp eye out for condenser and filter-drier health.



Coil Cabinets

Imaging Solutions can design and build a coil cabinet to suit your requirements. We can custom design a cabinet from ground up if you have specific requirements or we can use the manufacturer of your MRI machine's suggested layout. The cabinet can be made out of a range of materials to match the colour scheme or theme of your room.

See below for some sample cabinets which are the suggested designs from manufacturers and the following pages for a range of colours.

TOSHIBA

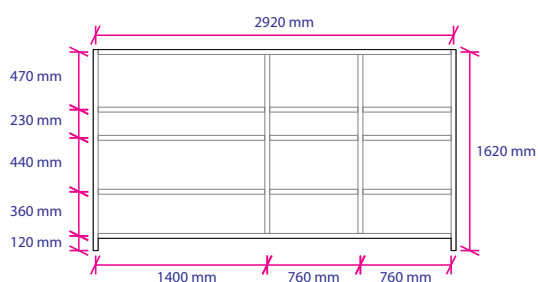
SIEMENS

PHILIPS

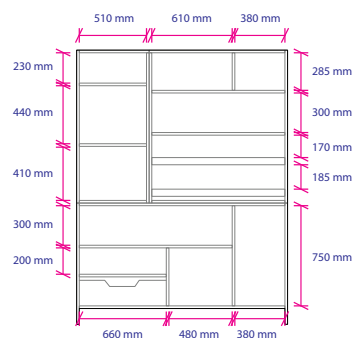


Examples

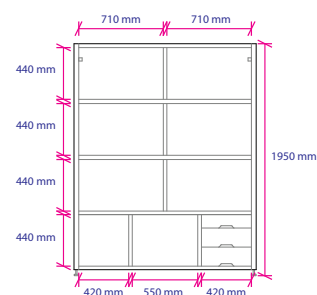
GE



Philips



Toshiba



Frequently Asked Questions

Do I need to replace my RF cage if I upgrade from 1.5T to 3T?

This is another strong differentiating point featured by the Imaging Solutions product. If you are upgrading from a 1.5T to a 3T strength solution you do not need to change the RF cage. The original structure and its inbuilt RF integrity will support your needs as technology changes. It should be noted of course that in the event of additional magnetic steel shielding being required to contain the altered fringe field created by a magnet change the modular RF cage allows optimum access to wall cavity spaces again without effectively destroying your entire investment.

What sound attenuation measures are inbuilt within the Imaging Solutions design?

Uniquely Imaging Solutions free standing design affords the advantage that the structure is not connected to the host room walls and inherently typically incorporates a 50 mm air space. This air space not only serves as a natural noise attenuation void, but also the fact that the walls of the host room are not mechanically connected to the free standing RF cage, omits vibration transference through the building structure.

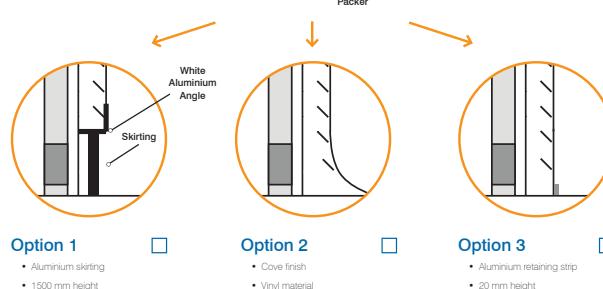
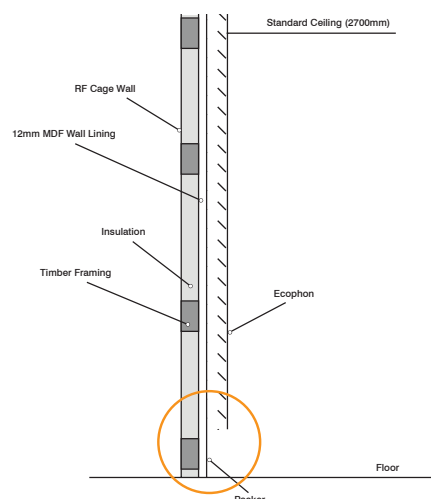
Imaging Solutions offers a wide selection of noise attenuating/dampening wall covering materials which provide a reduction in noise.

What host room space limitations apply?

There are none other than those imposed by the modality supplier relative to the physical size of the magnet and its connectivity to quench, plant and the services required. The infinitely customizable options offered by the modular Imaging Solutions RF cage design in a practical sense means we can build your RF cage in almost any situation while working around structural challenges cost effectively, our cages are located internally within the Host Room while maintaining a 50mm air gap between walls and ceiling structures.

Can I use my own builder to fit out the RF cage?

Again yes, this is often an option and we do not in any way penalize our customers who may wish to use their practice or project builder to undertake this work for any reason. We are happy to advice and support this process and due to the transparency of the quotation format we offer you have the option to either turn key a project with Imaging Solutions or unbundle elements which make either work flow or financial sense to do so.



How do our quotes compare to our competitors?

One word - transparency. Our policy is to provide optimum transparency in our quotations. Each element of your project is separately costed and the respective pricing clearly identified. You won't see a sea of PC estimates in our quotation submissions. This means you will know in nearly all cases what your project will ultimately cost. If there is a change, it will be due to a change you have made or a challenge which was not able to be identified at the outset of our quotation. Simply put, we aim to surprise you with our performance and reliability, not sudden unexpected changes in the projects cost due to PC estimates or variation costs.



your single source supplier



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Customer Service Hotlines

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Technical Service: 1800 300 100

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