

Retracom Kit Cold Rooms



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Introduction

Thank you for choosing a Retracom Cold Room.

To maintain the validity of our warranty your cold room must be built in accordance with this manual. It is important that you read and understand these instructions before commencing construction so that the room will function as designed. Should you encounter any difficulties please do not hesitate to contact our experienced personnel on (07) 3803 9333.

Kit cold rooms are made to customer specifications and requirements. The instructions in this manual cover only the basic options. The installation of a basic cold room proceeds in the following sequence:

1. Base layout,
2. floor(panel floor only)
3. Walls,
4. Ceilings and external trim,
5. internal trim, frames,
6. concrete(insitu floor only),
7. Doors.

The kit is packed ex-factory and supplied with all the materials required to build the cold room including prefabricated doors, pre-trimmed panels, aluminum moulds and stores. The exact quantities are specified on the cold room plan included with the packing slip and invoice usually in the stores pack.

The basic tools required to complete the installation are:

- Chalk string line
- Tape measure
- Hacksaw
- Drill 5/32"
- Spirit level
- 6mm masonry drill
- Rivet Gun
- Torque screw gun

Guidelines

The following information is relevant to the installation of our cold rooms;

General

- A plan of the kit room is included with the store packs
- Space rivets / screws at 300mm centers
- As the panel is pre-trimmed and must be assembled as per plan. The basic notation for plans are **W – walls, C – ceilings, WT - wall tops,**
- Aluminum moulds are supplied 30mm over nominal length so they can be cut to size on installation to allow for panel length
- Always consult with your refrigeration contractor before starting work for any special requirements regarding the fitting of the refrigeration units
- Installation procedure assumes access around external areas of the room, colorbond straps can be supplied to hold panels in position for room into block work where access is limited
- All freezers need to be fitted with explosion ports and door frames must be heated with the correct specified voltage
- Cold rooms require a vapor tight seal to be formed by the external skin with mastic sealant applied to external joints and extrusions
- Ensure foam to foam contact is made at all panel joints and connections, as this forms the insulation of the room
- The term “foam” is used to mean the panel core material (expanded polystyrene (EPS) of all grades, PIR, Mineral Wool, XPS)
- Mastic seal all external female panel edges and all external aluminum trims
- For cleaning down use only kerosene, shellite, Jiff or similar
- Cold room dimensions are expressed in terms of finished external panel sizes
- For long panels lifting aids should be used
- Wall panels have head cuts which provide a rebate on which the ceiling panels rest (38mm foam left on all panel widths unless otherwise specified)
- Wall panels also have floor cuts to suit the particular floor type and allow foam to foam contact
- Conduction cuts should be done at all points where cold may transfer from low to higher temperature area to prevent sweating/condensation and moisture buildup
- Moulds call-up notation is F&B front and back, R&L right and left
- 70 x40 angle is used to cap of external top of room
- Radius cove is used as an internal trim
- Joint mould is used to join panel floors
- 40x40x1.6 angle is used for the base and external upright corners
- Ceiling suspensions are required to support spans of panel that exceed certain design lengths
- NO mastic seal is required on internal trim

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Floors

- “Insitu floors” consist of plastic vapor barriers, polystyrene foam and concrete poured in position, the other basic option is a panel ply and epoxy floor
- **Do not** shut doors/seal cold rooms with concrete insitu floors until concrete has cured (usually around 3 days)

Doors

- Doors sizes also referred to as the clear opening and configuration are custom made for every installation.
- Door cut outs are 15mm over clear opening size
- Silicone seal blue chair fascia to walls to prevent ingress of moisture
- Heated frames must only be connected by qualified electricians
- Heater cable Cold tails are centralized in the head of all Heated swing type frames and are exposed towards the opening side of slide door
- **Do not** apply pulling force to cold tails
- All hardware for mounting/hanging the door is provided in a separate pack/kit
- Concrete cove is used with insitu/ concrete floors

Site Handling

Panel packs up to 6m long can be unloaded and handled using a fork lift. Care should be taken to ensure that the forks do not contact the bare panels. Suitable protection should be used to avoid damage.

If a mobile crane is used to lift packs, care must be taken that the slings coincide with the pack bearers. Sling protection must be used to protect the edges of the top and bottom panels.

Refer to drawing SPA-01-013-03

Construction

Base Setup with Insitu Floor

1.	Ensure that the concrete base area where the room is to be installed is clean, dry and level
2.	Use a chalk line to mark out the position of the base angle on the concrete. Add 6mm to the overall external dimensions of the room. (E.g. if the room is 1800 x 1800mm then mark out base size as 1806 x 1806mm.)
3.	Check the marked out base position for square by either ensuring the diagonals are the same length or using the "3-4-5" method.
4.	Run a continuous bead of mastic around the base approximately 10-15 mm inside the chalk line.
5.	Lay the 300mm wide <i>polythene strip</i> along each side in turn. Place the strip onto the mastic and to the inside of the base chalk line. At the corners, overlap the strip and cross seal between with mastic.
6.	Apply mastic to the underside of a <i>300x300 corner piece</i> (40x40mm angle section) and place onto the polythene sheet at the corners as marked by the chalk line. Fix corner piece down with <i>sure-drive</i> masonry anchors. Repeat for all corner
7.	Once all corners are fixed in place measure and cut to length the intermediate <i>40x40x1.6mm angle</i> . Cut to the outside of the line to ensure the ends of the corner angles butts firmly to the intermediate angles.
8.	Apply mastic to the underside of the intermediate angle and place on polythene strip along the base chalk line. The intermediate angle may need to be sprung into position.
9.	Fix down the intermediate angles with <i>sure-drive</i> masonry anchors.

Once the base setup is complete the next step is to install the walls.

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Base Setup with Panel Floor

1.	Ensure that the concrete base area where the room is to be installed is clean, dry and level
2.	Identify the factory made floor panels from the plans (floors greater than 1200 will be supplied in multiple pieces)
3.	If panel only floor the pieces will engage with a male-female "Flushline" joint as per wall panels.
4.	If panel, ply and epoxy type floor joining moulds will be provided for both internal and external joints.
5.	After assembly of floor segments fit remaining 40x 40 base angle to floor skin with rivets
6.	Check measure the diagonals to ensure floor is square
7.	You are now ready to stand the walls

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Wall Assembly (Panel & Insitu Floors)

1.	Determine at corner at which to start wall assembly based on the physical constraints of the job. It is easiest to assembled wall panels in sequence starting and finishing at a corner. Start with the rear or hardest corner
2.	Run a continuous bead of mastic along the inside upright of the 40x40 base angle
3.	Identify the panel numbers of the starting corner from the plan. The panel colorbond skin should be trimmed to allow foam to foam contact
4.	Assemble corner panels together with 40x40 vertical external corners
5.	Position assembled corner panels hard up to base angle corner and fix plumb with 5/32" rivets
6.	Select next wall panel to be stood and run a mastic bead along external female edge of the panel
7.	Stand panel to engage panels by way of the flushline jointing system Rock panel into position. The difference with a between panel and insitu floors is that the floor is already in position for panel floors requiring the wall panel to be pressed down into the space between the 40x 40 base angle and the floor foam
8.	Long 5/32" rivets are provided to fix through joint to hold panels with foam to foam contact while in the process of standing (before final capping off)
9.	Panels may need to be tapped with a length of 4"x2" soft wood or similar to ensure the foam to foam contact also indicated by the joint becoming flush(slight gap should remain)
10.	Continue to assemble wall panels with reference to the plan and fix off by riveting to the 40 x 40 base angle and 40x40 external angle at corners until all walls of the room have been stood
11.	Verify the position of any cutouts against the plan as you go
12.	Remove any sections of panel left in at cut outs using a saw or knife

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Ceiling Panel and External Trim

1.	If ceiling suspensions have been specified on the plan then cut the 6mm wire rope to allow sufficient length/drop from the steel support structure to the top of the ceiling panel. Allow for a 300mm overlap at each end.
2.	Fix the wire rope to the support structure at the locations indicated on the plan using the 3 D Clamps with a 300mm overlap and clamps facing in opposite directions
3.	Select a panel at which to start based on the constraints of the job (generally the backside) with reference to the plan
4.	For panels with ceiling suspensions drill a hole through the centre at the required location and assemble the general arrangement (refer drawing SPA-12-004-02)-
5.	Apply a continuous bead of mastic to the top external female side of panels before lifting into position to sit on wall head cuts (connect ceiling suspension if specified)
6.	Engage ceiling panels with the Flushline joint system as per the walls
7.	Verify the position of any cut outs against the plan as you go
8.	Apply a bead of mastic to the underside of both legs of the 70x40-300x300 corner pieces and rivet into position at external corners
9.	Apply mastic to intermediate 70x40 external angles and fit along to front and back, right and left sides of the room

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Internal Trim with Insitu Floor

1.	Fit radius cast corner blocks to internal ceiling corners
2.	Cut radius cove to length and install between radius cast corners at wall to ceiling only (note NO mastic seal on internal trim)
3.	Use a chalk line to mark out the top line of the concrete cove around the walls allowing for floor foam, concrete and any fall to the doorway
4.	Fit concrete cast corners at the floor corners
5.	Cut intermediate concrete coving angle to length and fit to wall, with a silicone back and top seal and rivet to internal skin.
6.	Measure and cut vertical 25mm radius coving for internal upright corners and rivet in position
7.	Once no further foot traffic is required in the cold room sweep out the floor and lay a single polythene sheet that acts as a vapour barrier in the floor (supplied in 2 m wide rolls doubled over) Seal with mastic to perimeter overlaps with polythene strip laid in base setup.
8.	Check that wall panels all have floor cuts to prevent conduction
9.	Lay floor foam ensuring a tight fit against walls (supplied 10mm oversize)
10.	The floor is now ready for concreting (wiper style threshold frames must be in position also)

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Internal Trim with Panel Floor

1.	Fit radius cast corner blocks to internal ceiling corners
2.	Cut radius cove to length and install between radius cast corners at wall to ceiling only (note NO mastic seal required on internal trim)
3.	Use a chalk line to mark out the top line of the concrete cove around the walls. (ensure allowance is made for floor foam and concrete fall)
4.	Fit radius cast corners at the floor corners
5.	Cut intermediate radius coving angle to length and fit to wall, with a silicone back and top seal and rivet to internal skin.
6.	Measure and cut vertical 25mm radius coving for internal upright corners and rivet in position

Door installation

Refer to Drawing SDC-22-001-01 for standard door details.

Non-Heated Frames - Wiper

1.	Fit head and two legs into clear opening
2.	Rivet corner stakes
3.	Square up and screw to external wall in holes provided
4.	Square up frame and rivet to internal wall
5.	Silicone back seal around blue chair

Non-Heated Frames – Step up

1.	Fit head and two legs into clear opening
2.	Fit sill to bottom of doorway
3.	Rivet corner stakes top and bottom
4.	Square up and screw to external wall
5.	Square up frame and rivet to internal wall
6.	Silicone back seal around blue chair

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Heated Frames - Wiper

1.	Remove backing angle from head and 2 legs
2.	Place frame into clear opening
3.	Check existing floor height to threshold to give required finished floor (allowing for styrene and concrete)
4.	Square up and screw to external wall
5.	Fit backing angles into frame by squaring and riveting off internally
6.	Silicone back seal around blue chair

Heated Frames – Step up

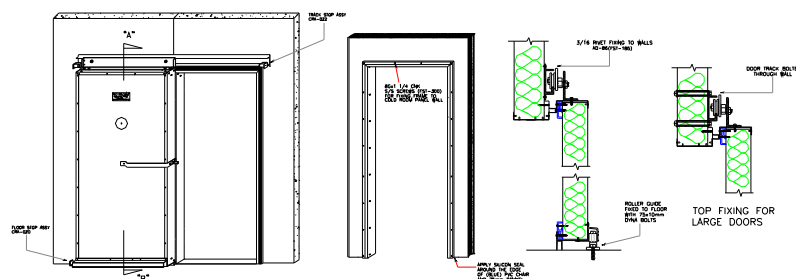
1.	Remove backing angle from head and 2 legs
2.	Place frame into clear opening
3.	Square up frame and screw to external wall
4.	Fit backing angles into frame by squaring and riveting off internally
5.	Silicone back seal around blue chair

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Slide Door

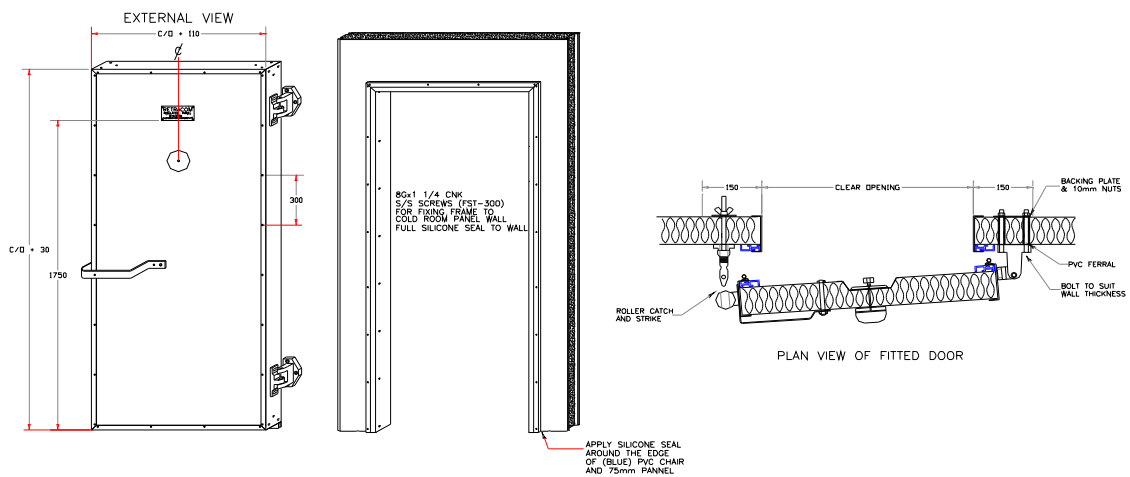
1.	Position door track above the door frame as in figure below. The end of the track stop should align with the outer edge of the blue chair of the frame to ensure that the gasket will seal on the blue chair. Tracks are fitted flush with top of blue chair on opening side and 5mm up on fixed side.
2.	Fix with track with No11 rivets provided in kit For doors over 1200mm wide clear opening door track is to be bolted through the wall at 600mm centres with bolts provided, use pvc ferrals in panel to stop Panel from crushing when bolts are tightened
3.	Loosen the roller cam nuts to enable the one roll at a time to be hung on track OR Remove track stop and roll door onto track and refit stop
4.	Open door flush to full clear opening and position bottom door guide and fix to floor at that point
5.	Adjust roller cams to suit clear opening on Standard style door OR adjust roller cams to provide 5mm compression against the floor on Wiper
6.	Check gasket seal from inside of room and adjust head angle and bottom roller guide to give minimum 5mm compression on all lab gasket
7.	Close the door to position the striker and mark centre hole and drill with 3/8 or 10mm drill through both skins/wall
8.	Place strike in position. Rivet in holes provided then fit nylon rod, ferral flat washer and nut



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Swing Door

1.	Position the swing door to align seal to the PVC blue chair fascia. Use wood chocks or similar. 25mm packer from floor with Wiper style to give 5mm gasket compression
2.	Mark location of hinge (or post on 150mm doors) fixtures
3.	Drill through wall as marked and use ferals, nylon rod and nuts to fit hinge (post) to wall
4.	Check gasket seal from inside of room and adjust hinge bracket on door to give minimum 5mm compression on all balloon gasket
5.	Close the door to position the striker and mark centre hole and drill with 3/8 or 10mm drill through both skins/wall
6.	Place strike in position. Rivet backing plate to external wall then fit nylon rod, ferral, flat washer and wing nut



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Details

TYPICAL COLDROOM SECTION	TCS-01-001-02
NO FLOOR DETAIL	SPA-05-001-01
INSITU FLOOR DETAILS	SPA-06-001-01
SUBFLOOR VETILATION AND HEATING DETAILS (i)	PA-06-004-01
SUBFLOOR VETILATION AND HEATING DETAILS (ii)	PA-06-008-01
WALL AND CEILING DETAIL	SPA-10-001-01
WALL AND CEILING BUTT	PA-10-003-01
SUSPENSION DETAIL	SPA-12-004-02
GIRT FIXING DETAIL	SPA-12-010-01
SLIDING DOOR DETAILS (i)	SDC-09-001-01
SLIDING DOOR DETAILS (ii)	SDC-08-001-03
SWING DOOR DETAILS (i)	SDC-07-001-01
SWING DOOR DETAILS (ii)	SDC-06-001-01
SWING DOOR DETAILS (iii)	SDC-06-001-02
DOOR SILL DETAILS	SDC-22-001-01
FLUSHLINE PANEL (MKII)	SPA-01-005-01
FLUSHLINE PANEL (MKII)	SPA-01-005-02