KINGS BOTTLE

Est. 2010 — The Wine Storage Specialist

ASSEMBLY INSTRUCTIONS

Timber Wine Rack

Joining assembled units side by side and stacking them, to build a rack of any size.

SEE A SINGLE UNIT ASSEMBLED

Scan for the video guide to building one rack. It covers the single-unit build only — the joins in this document are not in it.

kingsbottle.com/pages/timber-wine-rack-assembly
kingsbottle.com.au/pages/timber-wine-rack-assembly

UNITED STATES AUSTRALIA

BEFORE YOU START

Every unit in the wall must already be finished as a single rack. Use the Classic or Sloped document for that; this one starts once the units are standing.

Have the connector parts counted and to hand before you move any unit into place. Part one gives the count.

Tools: a **tape measure** to set out the connector column, and for the wall brackets in Part two a **drill** and **screwdriver**. Nothing here is driven, so no mallet is needed.

Two people from the first lift onwards. Work on a flat, level floor with room on all sides.

SAFETY

A joined rack must be fixed to the wall before it is loaded. Joining puts every wall past the size where a rack can rock, so brackets are not optional here. They are ordered separately; Part two gives the count and the method.

Clips alone are not a side-by-side join. Do not load bottles until every metal connector piece is in, on both bar planes.

Never stand or climb on a rack, joined or single.

THE THREE CONNECTOR PARTS

All three are ordered separately from the racks. The colours below are the same ones used in the online rack planner, so a plan and this document can be read together.

CONNECTOR CLIPS

Plastic. Hold two units in the right position relative to each other. On a stacked join they are the only part used.

METAL CONNECTOR PIECES

Steel, 75 × 22.5 mm. Make a side-by-side join structural. Not used on a stacked join.

WALL BRACKETS

237 mm, supplied with plug and screw. Fix the finished rack to the wall. See Part two.

PART ONE

How a large rack is divided

A single unit is at most 12 holes in either direction. Anything larger is built from several assembled units placed against each other, so every unit in the wall is finished as a single rack first — using the Classic or Sloped document — before any of this applies.

EACH JOIN TAKES ONE LINE OF THE GRID

Two units side by side are separated by a **connector column**: one column of the overall grid that carries the join. It takes bottles like any other column.

Two units stacked are separated by a **connector row**, in the same way.

So a wall 20 holes across is not two units of 10. It is one unit of 10, one connector column, and one unit of 9 — a 20-column footprint. The connector column takes bottles like the rest of the grid, but the rack planner does not count it — it quotes 19 bottle columns, the conservative figure. Plan the space, not the unit count.

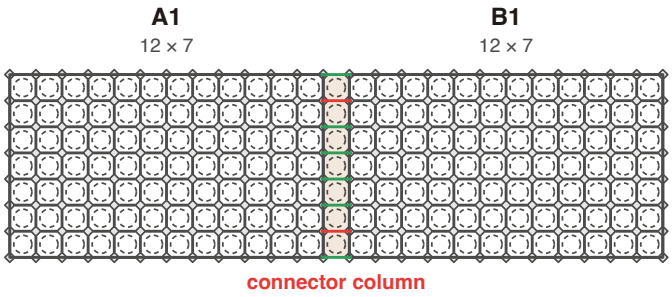


Fig. 1 — The wall drawn as one grid, here at the maximum: 12 + connector column + 12, a 25-column footprint. The tinted column is the connector column: a full column of the grid, holding bottles like any other. — a metal connector piece at every node; — the two nodes that also take a clip are drawn red instead — where both parts meet, only the clip is marked. The connector column is a full column of the grid, not a gap between two racks.

WHICH CONNECTOR GOES WHERE

JOIN	CONNECTOR	WHERE IT GOES	HOW MANY
Side by side Type H	Metal connector pieces, located by clips	The connector column between the two units, over its full height	One metal piece at every node down the column, plus two clips near the ends to fix the units' position. Doubled — front and back bar planes.
Stacked Type V	Connector clips only	The connector row between the two units, over its full width	One clip at every node across the row. Doubled — front and back bar planes.
To the wall	Wall brackets with fixings	The front frame, at the corners of each 13-hole module	Four per module. See Part two for the count.

Every quantity is doubled. A rack has two bar planes, one at each end of the 235 mm slat. Whatever a join needs at the front, it needs the same at the back.

THE CONNECTOR CLIP

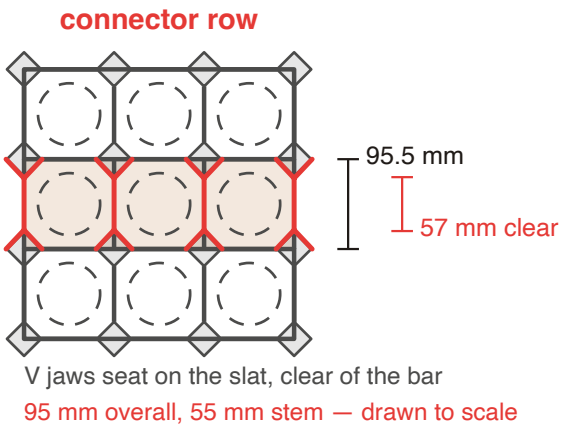


Fig. 2a — How the clip holds. It grips the **timber slat** of each unit across the connector line and stays clear of both bar planes, so it locates the units without carrying load through the bars. One at every node on a stacked join; two per seam on a side-by-side join, where they hold the two units in position while the metal pieces carry the load. Drawn to scale: the clip is 95 mm overall, one node pitch, so its jaws land on the two facing slats.

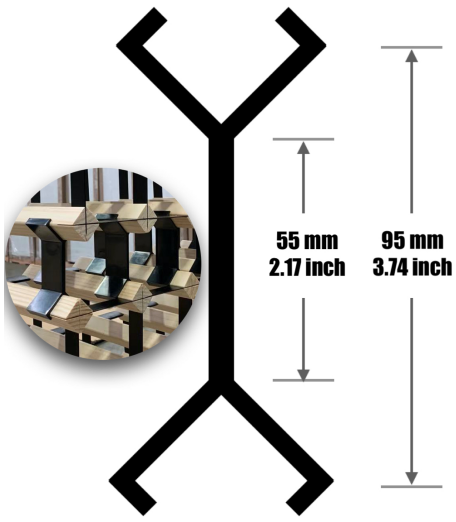


Fig. 2b — The clip itself: **95 mm** overall, with a **55 mm** stem between the two jaw roots. A V at each end seats on the 45° face of one slat, so the clip cradles the slat of each unit and touches no bar.

WORKED EXAMPLE — A WALL 20 HOLES ACROSS, 8 HIGH

Two units, 10 and 9 columns, with one connector column between them. Eight rows is within a single unit, so there is no connector row.

9 nodes down the connector column (8 rows gives 9 nodes), so 9 metal pieces per plane — **18 in total**.

2 clips per plane — **4 in total**.

Two 13-hole modules across, one high — **8 wall brackets**.

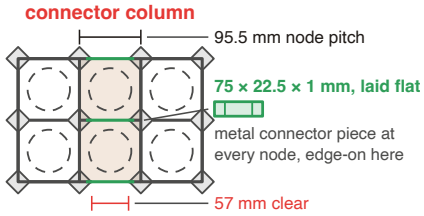


Fig. 2 — A metal connector piece at every node down the connector column, in the plane of the bars. The piece is flat, so edge-on it reads as a line of the same 1 mm as the bars it splices: 75 mm across the 95.5 mm node pitch, lapping about 9 mm onto each unit's bar either side of the 57 mm clear gap. The column carries bottles like any other.

TYPE H

Joining two units side by side

Units A1 and B1, both finished as single racks, of equal height.
Work on the front plane first, then repeat everything on the back.

01 Stand the units a connector column apart

Leave a gap of one grid column between A1 and B1. Set it out by node spacing, not by the gap: the outermost node of A1 and the outermost node of B1 must sit **one pitch apart, 95.5 mm** — the same spacing as any two nodes inside a unit. The clear gap between the facing frames then comes out near **57 mm**, which the 75 mm metal piece bridges with bearing at both ends. Use the 57 mm as a check, not as the setting-out figure.

02 Clip near each end of the column

Fit one connector clip at the second node from the top and one at the second node from the bottom. These two hold the units square while the metal goes in; they are not the structure.

03 Fit a metal connector piece at every node

Working down the column, insert one metal connector piece at each node, including the top and bottom. Seven rows means eight nodes, eight pieces — count the nodes in Fig. 3.

04 Repeat on the back plane

Everything in steps 02 and 03 again, on the bar plane at the other end of the slats.

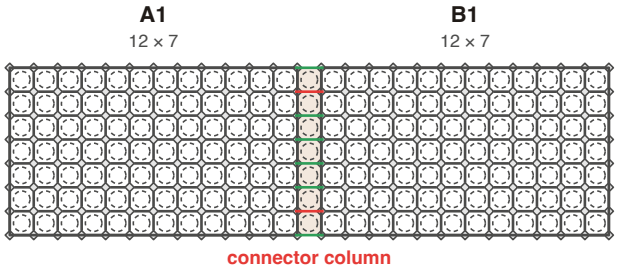


Fig. 3 — a metal connector piece at every node — eight of them here; the two that also take a clip are drawn red instead. Eight metal pieces and two clips per bar plane. The connector column is a full column of the grid, not a gap between two racks.

Where the 95.5 mm comes from. It is the nodal pitch — the slot spacing on the metal bars. A rack n holes wide measures n × 95.5 mm plus a 38.2 mm frame allowance overall, 19.1 mm beyond the outermost node at each side. Set out by nodes and the gap follows.

Clips alone will not hold a side-by-side join. A metal piece only slides into the slot in the slat, so it ties the two units without fixing where they sit — stopping the units shifting is the clips' job, and carrying the load is the metal's. Do not load bottles with the clips in and the metal still out.

TYPE V

Stacking two units vertically

Unit A2 goes on top of unit A1, both finished as single racks. A stacked join uses connector clips only — no metal connector pieces.

01 Clip the bottom row of the upper unit

With A2 still on the floor, fit one connector clip at every node along its bottom row — on A2, the unit being lifted, not on the top of A1. Ten columns means eleven nodes, eleven clips — count the nodes in Fig. 4.

02 Lift A2 onto A1

Two people. Bring it down square so every clip engages at once. Racks above roughly 100 bottle positions are heavy enough that this is not a one-person lift.

03 Repeat on the back plane

Fit the same run of clips on the rear bar plane.

04 Fix to the wall before loading

A stacked rack must be bracketed to the wall — it is the tall narrow case in its worst form. See Part two.

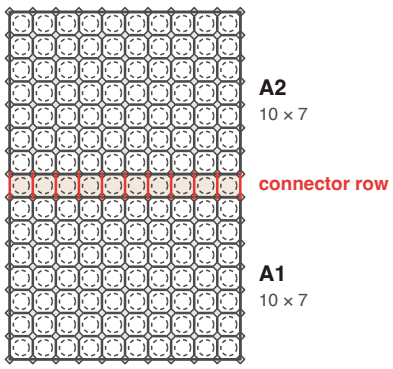


Fig. 4 — one clip at every node along the connector row — a full row of the grid, holding bottles like any other row. No metal pieces on a stacked join.

TYPE H + TYPE V

Four units in a two by two block

A1 and B1 on the bottom, A2 and B2 on top. Letters run left to right, numbers bottom to top. Units in the same row must be the same height; their widths may differ.

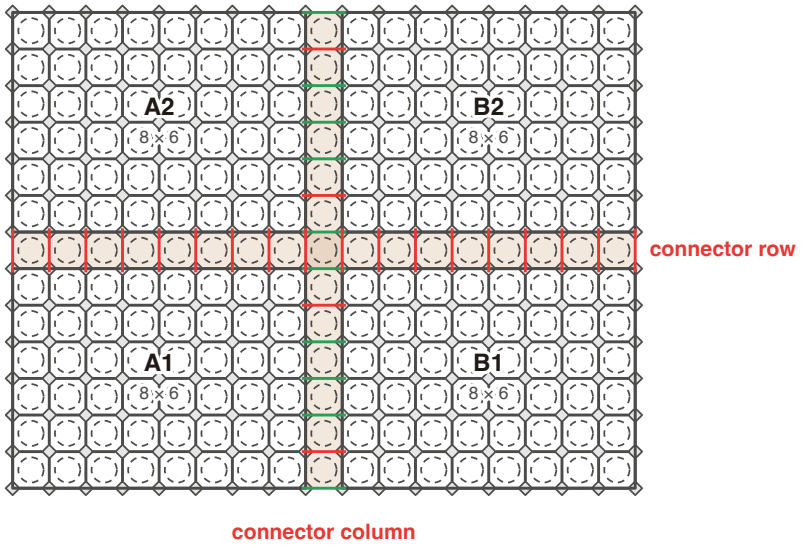


Fig. 5 — The block as one grid. The tinted column and row carry the joins and still hold bottles: a metal connector piece at every node down the column, a clip at every node along the row. The column is two side-by-side seams, upper and lower, and each takes two alignment clips — drawn red, since where a clip and a metal piece share a node only the clip is marked. All doubled, front and back.

SEQUENCE

01 **Build all four units**

Each one finished as a single rack, using the Classic or Sloped document.

02 **Join the bottom pair side by side**

A1 to B1, following Type H in full — both planes.

03 **Join the top pair side by side, on the floor**

A2 to B2, also following Type H in full. Joining them before lifting is easier and squarer than joining them overhead.

04 **Clip the underside of the top pair**

One clip at every node along the bottom row of the joined A2–B2 assembly, both planes, following Type V.

05 **Lift the top pair into place**

Two people, at least. Bring it down square.

06 **Bracket to the wall, then load**

See Part two.

COUNTING A BLOCK

Add the seams up. A block of four has two side-by-side seams (one in the bottom row, one in the top) and one stacked seam running the full width.

Each side-by-side seam: one metal piece per node down its height, two clips, doubled. The stacked seam: one clip per node across the full width of the block, doubled. Wall brackets follow the module rule in Part two, counted over the whole block, not per unit.

PART TWO

Wall brackets

Wall brackets tie the rack back to the adjacent wall. They are not needed on every rack.

WHEN YOU NEED THEM

A single small rack does not need brackets — it stands on the floor and the floor carries the weight. The threshold is about **8 × 8 holes**, or any tall narrow rack such as a **1 × 7**.

Every joined wall is past that threshold, so **bracket every joined assembly**. Brackets are ordered separately from the racks.

LENGTH

237 mm
9.33 inch

HOW MANY

Four brackets per 13-hole module, one at each corner. Count the modules across and up over the whole wall, not per unit: a wall 20 holes across and 8 high is two modules across and one high, so eight brackets.

Fig. 6 — The bracket, drawn from the part drawing. Side elevation above, wall plate seen face on below.

DIMENSIONS

237 mm overall, 22.5 mm wide, 1 mm thick. The wall plate stands 26 mm up with a Ø6 mm fixing hole. Black powder coated.

WHICH WAY ROUND

The bracket goes **inside a bay**, in the open space between two slat courses — not on top of the rack. The plate with the hole faces the wall; the strap runs the full 235 mm depth and the folded hem at the far end hooks up over the **front vertical metal bar**, the bar sitting in the 3.8 mm gap of the fold. The bracket grips that bar; it does not rest on the timber.

01 MARK

Move the wine racks to the desired location. Mark the position where the wall brackets will be installed.

02 DRILL AND PLUG

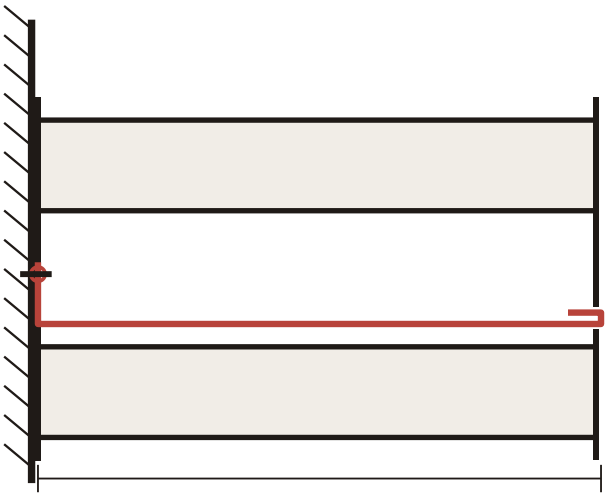
Drill the holes in the wall, then insert only the plastic portion.

03 SEAT

Feed the strap into the bay between two slat courses, hem first, and lift it so the fold hooks up over the front vertical metal bar. Then bring the wall plate against the marked hole.

04 SCREW IN

Screw in. Check the rack cannot be rocked away from the wall before loading it.



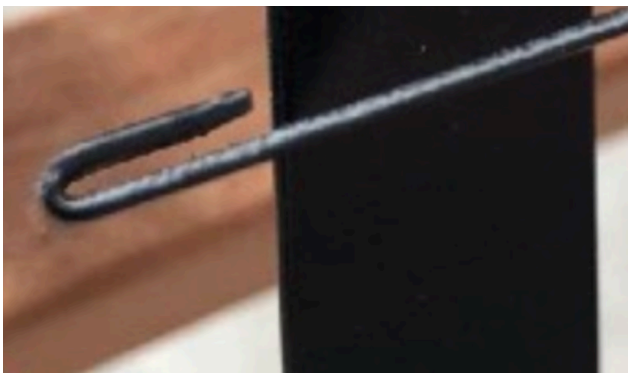


Fig. 7 — Left: rack seen from the side. The plate screws to the wall and the strap lies in the open bay between two slat courses, running the full 235 mm depth; both planes carry a vertical bar, and the front bar is shown broken where the strap passes in front of it. Right: the folded end hooked onto the edge of the front vertical bar. Slat courses are 38 mm deep on a 95.5 mm pitch; the dimension is the bracket, 237 mm.

PART THREE

If something does not fit

Faults in joining. For a fault inside a single unit — a slat that will not seat, a rocking rack, neck protectors coming off — see the Classic or Sloped document.

The metal connector piece will not slide in	The connector column is the wrong width. Measure node to node across the gap: it must be one pitch, 95.5 mm, the same as any two nodes inside a unit. Too wide and the 75 mm piece has nothing to bear on; too narrow and it will not enter. Set the units by node spacing, not by eye.
The two units will not sit at the same height	Units in the same row must be the same number of rows tall. Check the row count of each — a wall can mix widths freely, but not heights within a row. If the counts match and the tops still differ, the floor is uneven; shim the low unit before joining, not after.
Clips on a stacked join miss their nodes	The upper unit came down out of square, so some clips engaged and others slipped past. Lift it clear, check that every clip is still seated on the lower row of the upper unit, and bring it down level — two people, one at each end, lowering together.
A stacked join feels loose, or a clip pops out under load	Either a node was skipped or only one bar plane was clipped. Unload, and count the clips on both planes: a seam n columns wide needs n+1 clips per plane. A stacked join has no metal pieces, so a missing clip has nothing backing it up.

A side-by-side join flexes when the rack is loaded	The clips are in but the metal connector pieces are not, or are missing from the rear plane. Unload and count: a seam n rows tall needs n+1 metal pieces per plane, both planes. Clips locate a side-by-side join; the metal carries it.
The finished wall is wider than the space	Each join adds one grid column, so the footprint grows by 95.5 mm per join. A wall of n grid columns measures n × 95.5 mm plus 38.2 mm. Recount including every connector column and row before moving units into a tight alcove.
A part is missing or damaged	Count the nodes along the seam — a seam of n rows needs n+1 metal pieces per plane — then contact us with the layout and the part reference.