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Sauna Kit and Door Instructions

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Homecraft Sauna kit Installation Guide

My kit has arrived. What should I do first?

We highly recommend sorting all the sauna kit materials, identifying the different components of the sauna and familiarizing yourself with the part descriptions before you begin building... i.e. separate and identify the bench materials, set aside the Tongue & Groove (T&G) cedar for the four walls and the ceiling.

Tongue-and-groove cedar is usually supplied in 7 foot multiples, a 5 and a 2 footer, a 4 and a 3, or even full lengths of 7 feet. We supply sufficient cedar to cover the entire sauna room plus an generous allowance for waste cuts. **HINT:** On the main bench wall, you could put the 4 foot lengths along the upper portion of the wall and the 3 foot lengths on the bottom portion of your sauna wall. This way the butt-joint will be covered by the upper sauna bench.

Tools and materials that would be helpful...

- hammer
- miter saw (electric is best). Ensure the matching ends of cedar boards are exactly 90 degrees for a good match, if not then trim square with the miter saw.
- carpenter square
- air powered brad nailer with supply of 1" or 1-1/4" brad nails, (you will appreciate this before you finish the sauna....a great timesaver!) Rent or borrow one if you can.
- stapler to fasten aluminum foil vapor barrier
- scissors for cutting aluminum vapor barrier.
- 4 foot carpenter's level.
- approx. 2 pounds of 1-1/2" finishing nails if you don't have a brad nailer
- 1-1/4" wood screws to fasten through the cross supports into the underside of the seat boards.
- 3-1/2" wood screws to fasten horizontal bench support into wall strapping or studs.

General summary before you begin...

Before putting any cedar tongue-and-groove boards on the walls;

- make sure all your electrical rough-in boxes are installed per code. These boxes will be used to mount the sauna lights you want in your sauna.
- make sure any necessary wiring is installed in the wall cavity and not run on the wall surface.
- make sure the wire attaching the sensor to the control is installed properly in the wall cavity. Remember the sensor must come out of the wall directly over the heater and 2.5" from the ceiling.

Once you are positive all work needing done in the walls has been done, you are ready to staple aluminum foil vapor barrier to the stud face of your wall/ceiling framing.

When the aluminum foil has been stapled to the studs, you should strap your walls horizontally, beginning 1/4" off the floor and working up to the ceiling on 12" centers with 1x3" or 1x4" common boards.

Ensure that you've applied strapping around the door frame, window frames, as well as any vent openings in the walls. Also, be sure to install strapping behind where the sauna heater will go. You

will be fastening the heater brackets through the cedar, anchoring into the strapping behind the cedar. Also install strapping so the bench supports can be anchored securely through the cedar. Do NOT depend on cedar for anchoring or fastening purposes...cedar is a softwood and has very little holding strength. See our “Vertical Strapping Instruction Guide” for instructions on nailing the 1x3" or 1x4" strapping. Please ask for a copy of this guide from your dealer, installer, or contact Homecraft Mfg. Corp. directly at 1-800-870-7544 and ask for a copy to be faxed to you. Alternately, you can download the “Vertical Strapping Instruction Guide” diagram from the Homecraft website at www.homecraft.bc.ca. on our "Documents" page.

NOTE:

- b) Aluminum vapor barrier should have already been applied under the strapping before moving onto installing the cedar. (note: if you didn't do this you can staple the aluminum foil to the face of the strapping (furring) strips.
- c) The door should also be installed before the cedar goes on the wall. Ensure that you've applied strapping around the door frame.

Detailed instructions

ALUMINUM VAPOR BARRIER

We supply a generous amount of vapor barrier for your sauna. Contrary to the methods used when applying residential poly vapor barrier....do **NOT** stretch aluminum vapor barrier when installing. Instead drape it loosely and overlap any joints with a generous amount of overlap (suggest: 3"-4" overlap). When exposed to the heat of the sauna, the aluminum will flex a little over time so allow for this when you're installing it. A suggestion for those customers wanting the very best installation - joints can be sealed using self-adhesive aluminum tape, or red 3M Tuck tape. (not duct tape).

APPLYING THE T&G, (tongue and groove cedar)

Ceiling

Start with the ceiling first. Nailing is usually done through the "tongue" of the cedar board, at an angle so the next board slips over the tongue without the nail shank impeding it. The cedar is applied perpendicular to the ceiling joists in the sauna room. If cedar is going to be applied parallel to the ceiling joists, then strapping will have to be installed to nail onto. The ceiling cedar boards can be cut 1/8" short for easier fitting. The last board to be installed should be ripped at an angle to allow it to “slip” into place. You can also rip the backside of the “groove” on a saw so the last board simply needs to be placed in the gap, without fitting over the tongue of the previous board. Surface nailing with finish nails will be necessary on the last board.

Be sure to cut any butt joints accurately, for this purpose an electric mitre saw is one of the best tools. Do NOT trust the angle markings on a mitre saw - unplug the saw and double check the angle markings by locking the blade down into the kerf groove on the mitre saw and aligning the saw blade with a carpenter square resting against the back fence of the saw. This will show you the true “0” mark. Use this as your reference point for quality joints.

Walls

The walls are lined next.

It should be noted that a right handed person will find it easier to nail the T&G boards if they are

installed vertically with the tongues pointing to the right, working your way clockwise around the room. (Counter-clockwise if you're left-handed) When planning the location of each T&G board, utilize the natural beauty of the color variation and grain in the western red cedar.

HINT: If you like you can leave a 1/4" gap between the T&G boards and the floor to prevent any water laying on the floor "wicking" up the boards.

The T&G is secured to studs or horizontal strapping. Installing the T&G is easier using 1-1/4" or 1-1/2" finishing nails or brads in an airpowered "brad nailer" which can be rented or borrowed. When nailing the T&G, avoid nailing too close to the end of the board to prevent splitting the wood. Split boards can be prevented by drilling a small pilot hole if you are forced to nail near the end of a board. The nailing should also be done in a way so the nails do not interfere with the placement of the next board. Nails should go through the tongue of the board at an angle so the shank of the nail doesn't interfere with the groove of the next board sliding over the tongue and nail. The head of the nail should be covered by groove of the next board. Use a nail set to set the nail heads flush if nailing by hand.

Start in any corner, using your level to make sure your first board is "plumb", if it isn't you should do necessary trimming to get it perfectly straight and plumb. Some boards may not "bottom" completely onto the next board without some encouragement. Do NOT hammer, distort or "mash" the tongue of the board you are fitting. Instead use a short piece of T&G scrap and fit the tongue of this scrap over the board and hammer only on the nose of the scrap piece. This will force the next board completely over the tongue of the fastened board.

Rip the last board going onto a wall with a slight taper for easier fitting. The T&G going on the next wall will cover any gap. The last board of the fourth wall will need to be properly angled and fitted perfectly.

Finishing with a perfect fit in the last corner requires more finesse than the other corners.

All wall T&G boards should butt tight to the ceiling. Avoid having butt joints at the same level on adjoining boards, mix the lengths of boards on every new section so the eye is not attracted to joints unnecessarily. Think of laying hardwood flooring in a random pattern but on a vertical wall.

HINT: on the main bench wall you can install all 4' pieces near the ceiling and 3' pieces down near the floor. The joint will be hidden by the upper bench around 36" high from the floor, therefore no joint will be visible on the bench wall.

BENCH ASSEMBLY

Bench material is composed of the different parts outlined in the diagram below:

1- the 2 X 4 bench rails (item C). These run the full length of the bench and have a groove (dado) running the full length of the board. Two "rails" are required for each bench, one at the rear and one at the front of the bench. The assembled bench rests on horizontal supports previously fastened through the cedar and into the framing you installed for this purpose. Because of shipping constraints, U.S. customers will receive benches over 7 ft long, in 2 pieces. These longer benches are joined in the middle with material included in our kits.

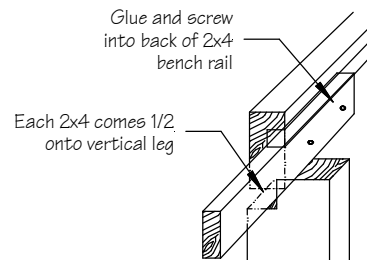
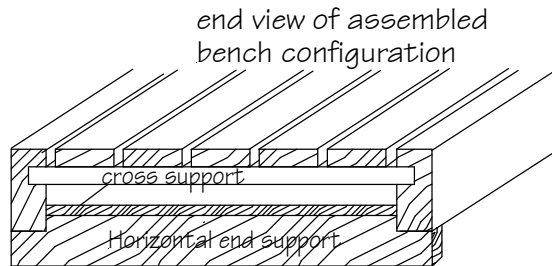
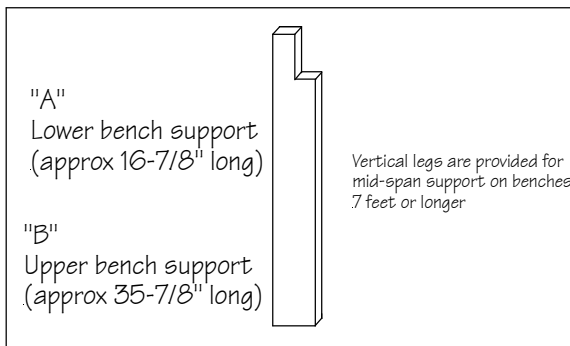
2- the cross supports (item D): these run perpendicular to the 2x4 "rails" and fit into the grooves cut into the bench rails. We supply enough pieces so a "cross support" can be installed at the start of the bench, then 12" on center after that. Finish off with the final "cross support" at the end of the bench.

3-the seat boards (item E): these run parallel to the 2x4 bench rails and are installed with an airspace between each board. Depending on market availability, these can be either 1x2, 1x3, or 1x4. Space the boards out evenly.

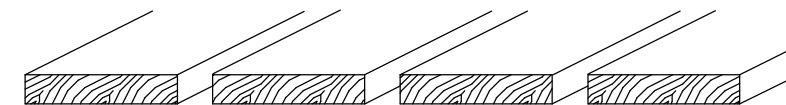
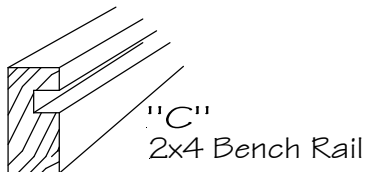
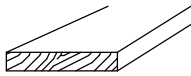
4-the legs (item A & B): these are vertical supports and have a notch at one end. These vertical legs are only supplied on benches 7 feet and longer as a mid-span support, or if any bench is supplied in 2 sections.

Assemble the benches after the walls are installed. **NOTE: Benches are best assembled upside down to ensure no fasteners will be visible after assembly. Fasteners can cause skin burns in the sauna if they contact your skin!** Assemble benches on a clean floor, preferably on cardboard to avoid marring the surface of the cedar seat boards. Measure the final dimension between walls where the sauna bench will be installed and cut the length of the 2x4 "rails" to 1/4" less than the length of the inside dimension of the walls.

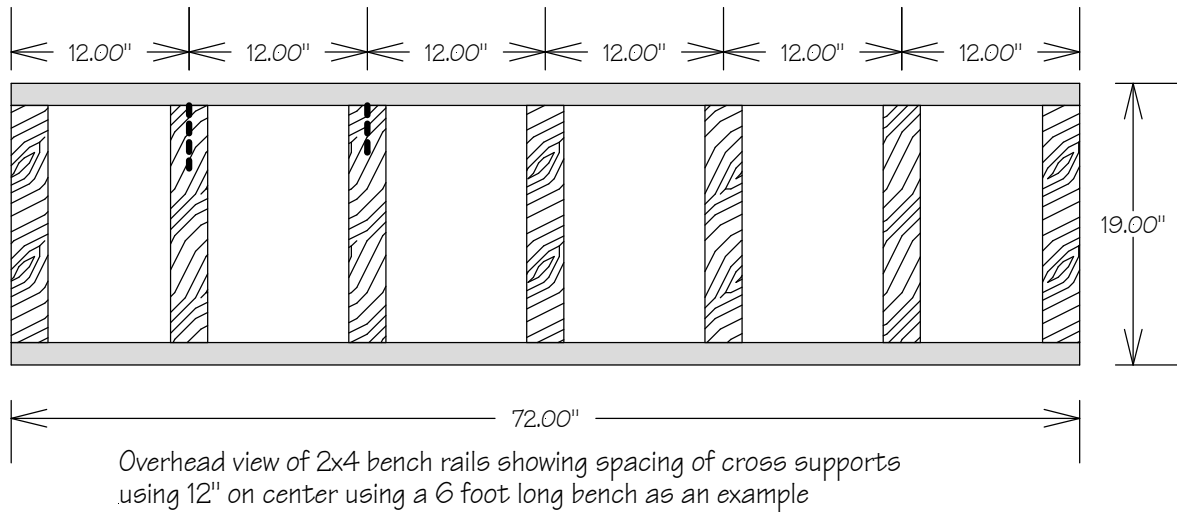
Bench Parts Listing...



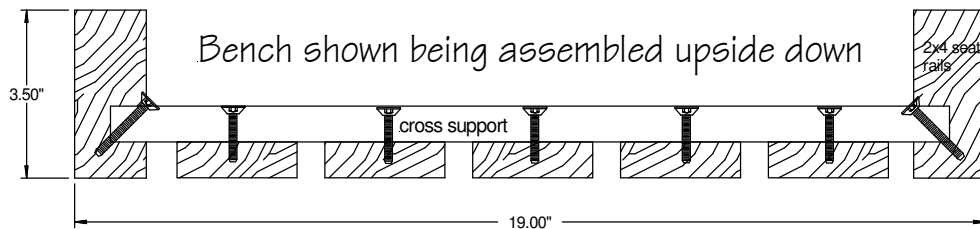
"D" cross supports (17-1/2" long)



"E" Seat Boards (can be 1x3, or 1x4 boards)



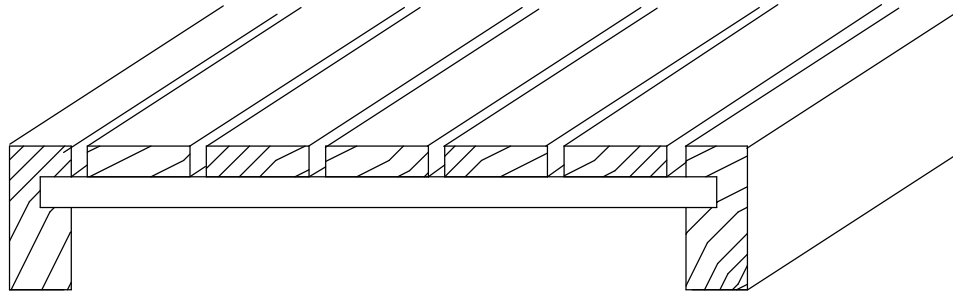
Using glue and wood screws, secure the cross supports to the 2x4 bench rails. Start at one end of the bench rails, then space the cross supports equally 12" on center. (Maximum distance between cross supports should not exceed 16") Assemble, taking care to keep the bench square, true and flat!



Layout the seat boards (these will be the boards you sit on) with an airspace between each board. Place the good side of each board face down. Lay the frame (this is the structure with the 2x4 rails and cross supports you've assembled to this point) carefully on top of the seat boards, and secure the seat boards to the cross supports with glue and screws. Be sure the bench remains square and the seat board edges are parallel with the 2x4 rails. Use screws that are short enough that they won't protrude through the top of the seat boards! **HINT: predrilling the screw holes will result in less likelihood of cracking as well as a stronger joint.**

All fastening is done from the underside of the bench. No fastening should be necessary from the top of the bench, however if done, the screws must be countersunk to avoid the possibility of a skin burn from a protruding metal screw head.

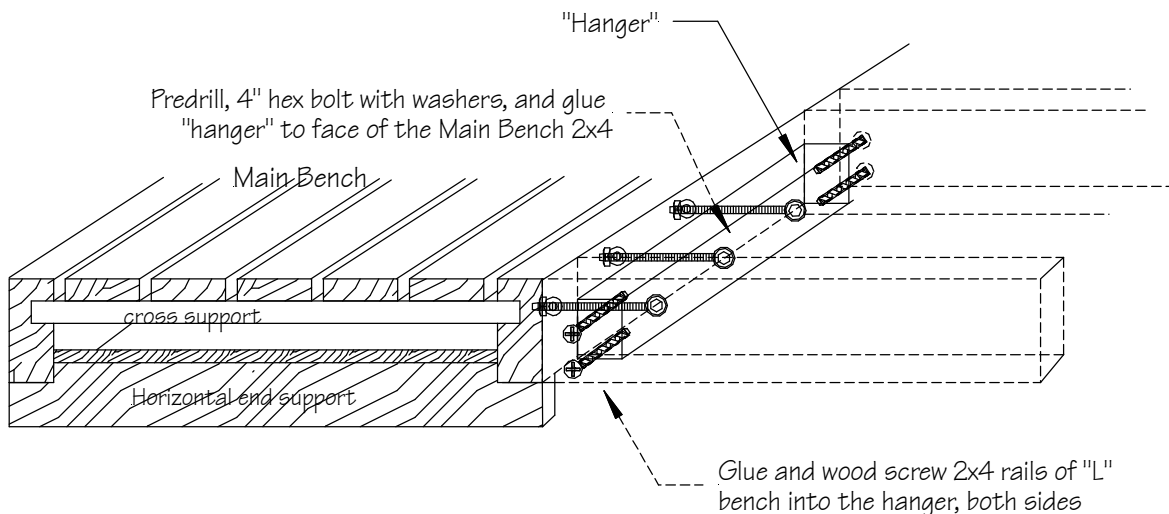
Benches are removable to facilitate cleaning, however if your sauna kit includes bench "L" extensions running at 90 degrees to the main bench, you may not have the option of removeable benches because of the extra fastening required to secure the adjoining benches.



assembled bench
configuration

Optional "L" sauna benches

If your kit has optional benches running 90 degrees to the main bench, you must install the included "hanger" per the diagram below. The 2x4 bench rails of the perpendicular bench should also be glued and attached with wood screws to the hanger. The hanger is designed to fit exactly between the 2x4 bench rails.

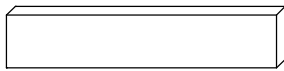


Sauna Flooring

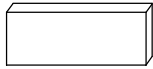
Homecraft PVC 12" X 12" floor tile is supplied to cover the traffic area in our saunas to prevent slipping and to provide a secure footing. Lock each tile into the adjoining one. Once the mat is assembled it can be easily taken out of the sauna and washed outside as needed.

(5) HEATER GUARD

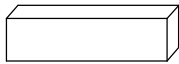
CHSH Heater Guard Specifications



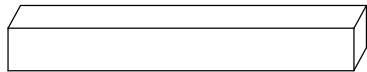
"A" 2 pcs @ 23" (front horizontals)



"B" 4 pcs @ 12" (side horizontals)

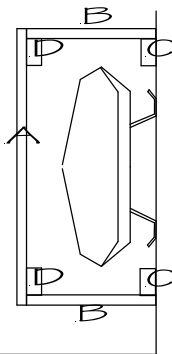


"C" 2 pcs @ 12 1/2" (wall verticals)

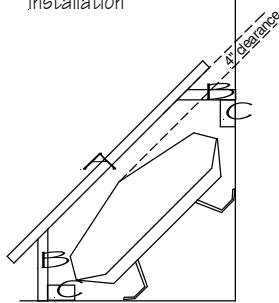


"D" 2 pcs @ 31" (front vertical main legs)

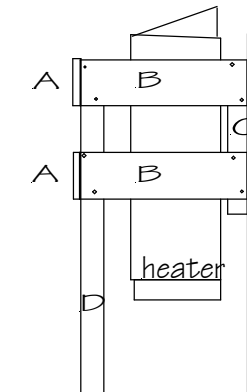
overhead view of heater guard when wall mounted



overhead view of heater guard for diagonal installation



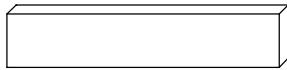
side view



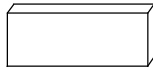
(filename: CHSH heater guard.cad revised Feb 14/2001)

NOTE: Heater guards are mandatory on all heaters and must be installed in compliance with prescribed clearances

HSH Heater Guard Specifications



"A" 2 pcs @ 29" (front horizontals)



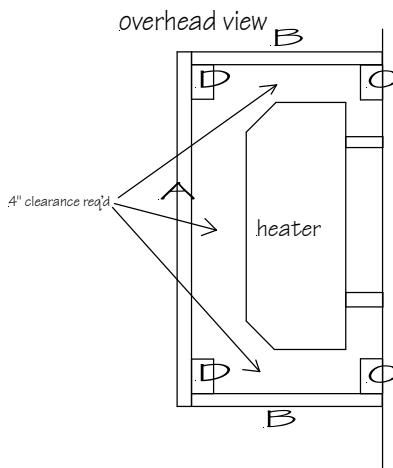
"B" 4 pcs @ 16 1/2" (side horizontals)



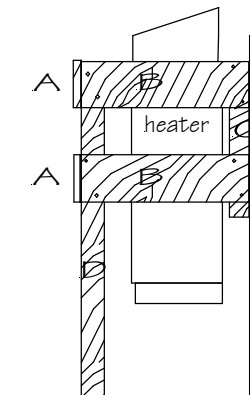
"C" 2 pcs @ 12 1/2" (wall verticals)



"D" 2 pcs @ 34" (front vertical main leg)



side view



(filename: HSH heater guard.cad, revised April 15/2002)

Heater guards are required around all sauna heaters.

HSH heaters require a 4" air space to the guard on both sides and front.

CHSH heaters can be located 1" or more from the heater side to an adjoining wall with 4" airspace on the opposite side and front still required.

(6) TRIM

Door casings are installed leaving a 3/16" "reveal" on the front edge of the door jamb, however

personal preferences vary. Layout and miter top corners accordingly.

SAUNA DOOR INSTRUCTIONS

(1) GENERAL

Homecraft insulated sauna doors are made of kiln-dried Western Red Cedar. Doors complement the interior of the sauna room with the natural beauty of the wood. If you have purchased our optional window door you should know the dualpane glass is hermetically sealed for energy savings, and tempered on both sides for safety.

When planning your sauna, note that the sauna door **MUST OPEN OUTWARDS**. Sauna doors **NEVER** use positive latching system as in regular doors. Roller latches, magnetic latches, and various automatic door closing systems are acceptable.

The sauna door is supplied with the door, the jamb (or door frame) and the door stop, which goes on the inside of the jamb. The closed door rests against the door stop molding and creates the 'seal' to keep a minimum of heat from escaping the room.

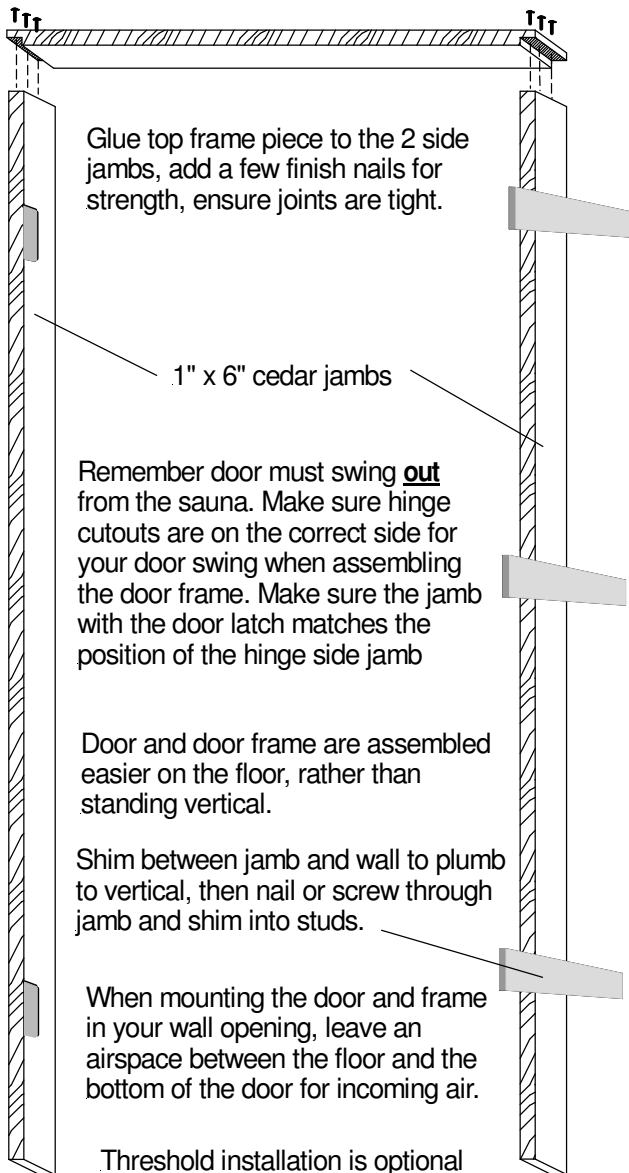
The standard sauna door is usually smaller than regular residential doors to minimize heat loss when opening and closing the door.

(2) INSTALLATION (Framing)

The rough door opening size required in your stud wall for our regular-size sauna doors (23-3/4" x 75-1/2") is 26" x 78". This extra 2" on each dimension allows for the thickness of the jamb (door frame) and allows the door frame some adjustment space if your wall framing is not square. The difference in space is taken up using door shims, or wedges available from a lumber dealer.

The width of the door jamb is 5 1/2" wide, enough to accommodate a wall framed with 2" x 4" studs, plus the 1" x 4" strapping inside the sauna room (used for vertical cedar T&G) and both finished walls. The door jamb may need to be ripped to the finished thickness of the wall.

Remember to rip only the edge away from the hinge and door latch !!!



(3) INSTALLING THE DOOR FRAME

Using "construction terminology", the rough opening for your door in your stud wall should be both "plumb" and "level". By this we mean the horizontal members of your rough opening should be "level", and your vertical side members should be "plumb"....or dead-on for accuracy. If not, don't despair, you will have some adjustment room when you put your door frame into the rough opening in the stud wall. Door frame installation is made a whole lot easier if the door opening is true and square.

At this stage you should have your door frame assembled, with 1/2 of each hinge pair set screwed **loosely** in to hold the door in place when the time comes. Remember the hinge door pins drop in from the top !! Don't install the door slab in the frame just yet, you will install the door slab after the frame is nailed in place and "trued" for level.

HINT: For cosmetic reasons, it's good to hide the screw or nails going through the jamb under the door stop molding you will install after the door slab is in the frame. Predrilling screw holes through the jamb will be stronger than just "driving" them through the jamb, and you are less likely to split the cedar jamb. Any holes you predrill should be 2-1/2" from the edge of the hinge side of the jamb, this way they will be covered later by the doorstop molding. Drill all 3 pcs of the door frame putting the holes about 12" apart.

Installing the Hinge Side: (only install nails or screws **loosely** at this point through the jamb)
Set the door frame in the opening and lightly fasten the hinge side to the adjoining stud through the holes you have already predrilled. Center the jamb so the edges are flush with both sides of the finished walls. If the 2" x 4" stud is plumb, nail or screw the hinge side of the jamb directly to the 2" x 4". If the stud is not plumb, shim as necessary so the jamb is plumb. **Always drive the fastener through a shim, not between a shim or you will pull the jamb crooked.** Make sure the door frame is up towards the top of the opening so there is some room for ventilation under the door slab. **Remember the door must open outwards from the sauna - take time to double check !!**

Installing the Top of Frame:

Level the top of the door frame, install shims as required directly in the path of screws or nails you will put through the jamb.

Installing the Latch Side:

Plumb the latch side, using shims as necessary, taking care that the measurement at the bottom of the door frame matches the measurement at the top of the frame.

Installing the Door Slab:

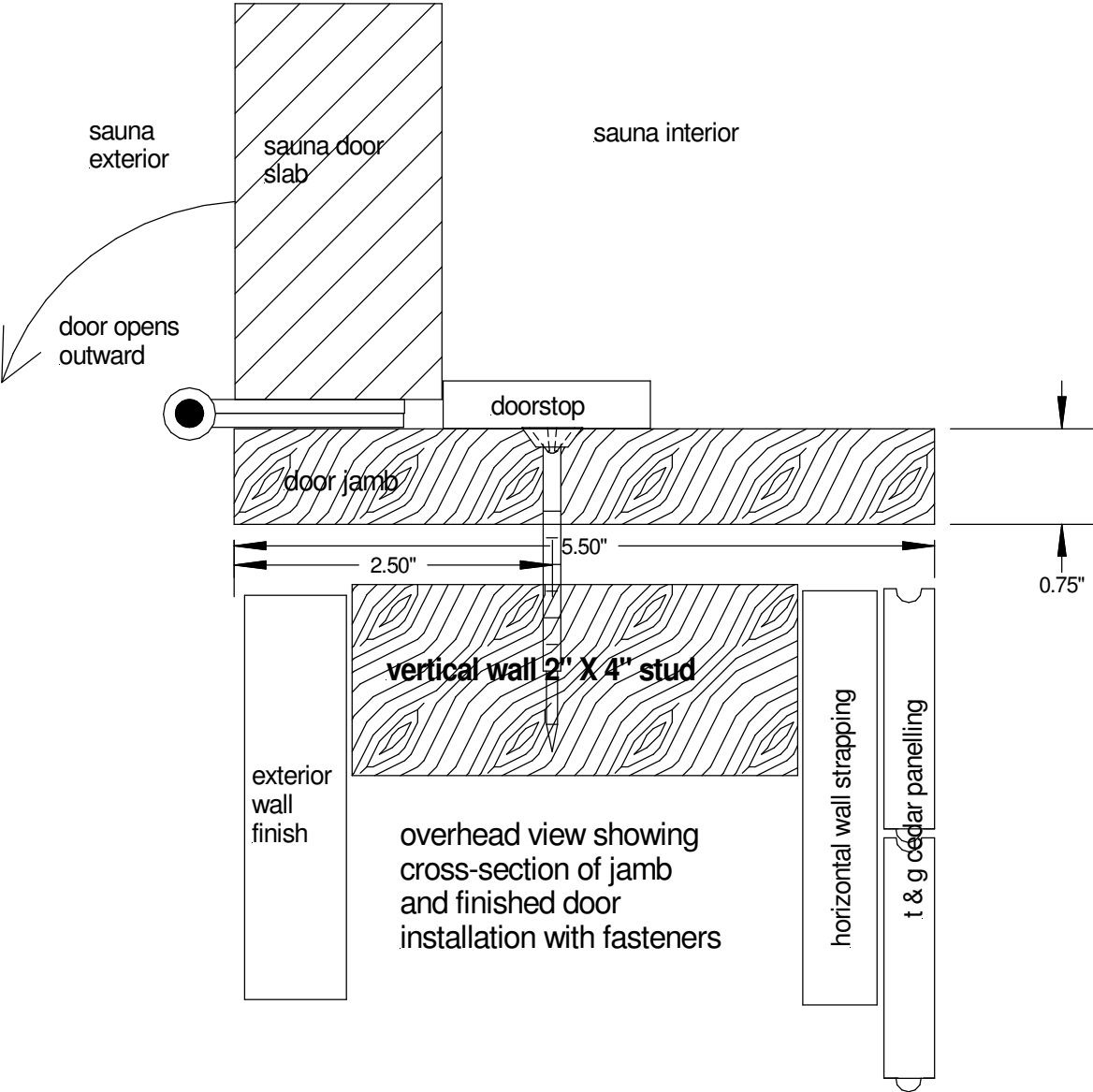
Now you can hang the door slab in the frame. Make sure the hinges attached to the door slab are **not screwed down tight yet**, allowing some room for fitting. Get another person to help you with holding the door slab and mating the hinge pairs together then tap the hinge pins down into the hinges binding the door to the hinges on the frame. **Do not close the door yet!!** Next, screw all the hinge screws down tight making sure each hinge fits nicely into the area routed out for it. The screw heads should be level and flush with the hinge surface so they don't bind when the door is closed. Now you can close the door.

Standing inside the sauna, survey the fitting of the frame around the door. Now is the time to "fine-tune" the frame installation, ensure the spacing between the door slab edge and the surrounding door frame is even on all faces. Here's where using screws is superior to using nails. Adjust your shims in or out as required to take up any slack between the door frame and the rough-in studding. Install the door catch and make sure the door moves smoothly from the latch position through to the full-open position. If the door swings on it's own....it's not level, adjust the hinge side so it's plumb on all sides. Place your level on the jamb while facing the jamb face standing in the doorway, as well as checking it from the edge-on view.

Once you're satisfied with the door installation you are ready to install the doorstop molding. With the door closed you can now nail the doorstops in place. Have someone maintain steady, gentle pressure on the outside of the door. Butt the doorstop molding up to the door slab and nail it into the jamb with small finishing nails.

Congratulations, you're finished!

An overhead view below shows a cross-section of a door hung in it's frame.



Sauna Room Venting

Proper venting and positioning of sauna vents is going to result in a more comfortable sauna experience. All our vents use cedar louvers for privacy and are contained in a metal frame for easier installation in the wall. Ideally, intake and exhaust vents are placed in opposite positions in the sauna room. Helpful pictures are on the Homecraft website. Do NOT use any powered vents or fans in your sauna.

Intake Air and Intake Vent Positions:

There are at least 2 options to provide fresh intake air in any sauna.

Option #1, Fresh air coming under entrance door.

This is the most commonly used, and assumes you want fresh air coming into the sauna under the entrance door. For this reason our sauna doors are intentionally provided with a gap under the door. If you choose to keep the door threshold in place, this gap will be approximately 3/4". If you decide to remove the door threshold, this gap will be about 1-1/2". If you find the 1-1/2" gap is too much, you can cut about 3/4" off the bottom end of the upright door jambs to lower the door closer to the floor.

Option #2, Fresh air coming through a dedicated wall vent.

This is when you install a fresh air vent in the wall solely to provide incoming air to the sauna. This fresh air vent is usually installed below the sauna heater and has no sliding doors on it. If you use Option #2, then you probably want to lower the sauna door by cutting 3/4" to 1" off the bottom end of each side door jamb. This intake vent must be specified in your order.

Fresh air vent includes:

2 louvers, each enclosed in a metal frame
plus 2 trim panels

Exhaust air and Exhaust Vent Positions:

There are at least 2 options with exhaust air venting.

Option #1, Standard, Insulated sauna door.

This door is provided with it's own integral exhaust vent, complete with sliding doors for air control.

Option #2, Optional window sauna door.

This door has no integral vent installed and requires a wall exhaust vent kit to be installed in the sauna wall. Placement of this exhaust vent is important. This vent should be installed on a wall in the opposite corner to the air coming into the sauna, if possible. This vent is best installed somewhere near the upper sauna bench where you can adjust the sliding doors while reclining. Height of this vent is usually no higher than 5 feet from the floor. Installing the vent any higher than this and you will lose too much heated air because of the height differential between the colder, incoming air and the heated, exhaust air.

Through-the-wall exhaust vent kit includes:

1 exterior trim frame
plus 2 louvers, each enclosed in a metal frame
plus 1 interior trim frame with 2 sliding doors

Framing for intake and exhaust vents should be done to provide an opening 12" wide x 5-3/4" wide.

With a wall opening framed to this size the louvered vents will fit exactly inside. *The louvered inserts are not installed until after the cedar panelling is in place.* The louvers are installed, "sandwiching" the wall between them, with the louvers pointing in opposite directions to block "line of sight". In other words, be sure no one outside the sauna can look into the sauna. If you can see into the sauna, rotate one of the vents 180 degrees. Fasten the louvers in place, using the holes provided in the upper/lower flanges of the louver vent.

Hint: you can use a staple gun to fasten the louver in place, straddling the holes when you fire the staple into the cedar. Alternatively use any low profile fastener so the vent frame can sit nicely on top of the vent.

Once the louvers are installed you can then install the trim frames, and in the case of the exhaust vent - the frame with the sliding doors. The sliding doors are installed on the interior of the sauna.

