



The batteries should be contained in a sturdy box that is vented to the outdoors. Homeowner is to supply this box, or you can have us supply it for you. The box should be very sturdy as it will have to hold a lot of weight for many years.

The box should be lined with two layers of poly cloth (see through plastic sheeting) for protection against spills or leaks. This liner needs only to extend up the sides of the box about 8" and stapled only at the top. You should then protect the poly from being ripped under the direct weighting of the cells by placing a couple of lengths of 1" x 3" (more or less) wood strapping on top of the poly and then placing the batteries on top of the wood. You should sand these pieces of wood to remove any splinters, or sharp corners, that may damage the poly.

When sizing your battery box allow about 2" or more of free space around the batteries as a whole and plan for a 1/2" gap between individual units of battery for air circulation. The height of the box should extend at least 8" above the top of the cells themselves for the off gases to rise above the tops of the cells before being vented off. This will also allow room for running your battery cables.

The plywood used for this box should be 5/8" or 3/4" thick.

Box sizes for various battery configurations are as follows:

Type of Battery	# of Batteries	Configuration (rows of batteries x # in row)	Length (inches)	Width (inches)	Height (inches)
US2200	4	2 x 2	26	20	21
US2200	8	2 x 4	48	20	21
Rolls CH-375	4	2 x 2	30	19	26
Rolls CH-375	4	1 x 4	56	12	26
Rolls CH-375	8	2 x 4	56	19	26
Rolls CH-375	8	1 x 8	108	12	26
Rolls T12-250	2	1 x 2	20	19	24
Rolls KS-33	12	1 x 12	91	18	34
Rolls KS-33	24	2 x 24	91	32	38*

* Make the bottom platform higher under the back row of batteries (half the depth of the box) to allow viewing the electrolyte reservoir from the front.

Lay 2 x 4's flat under the bottom of the box to raise it off the floor. Insert insulation board between the 2 x 4's if the box is on a cool floor.

Make the front piece of your battery box removable. You can leave it off while lifting the batteries into place so that you do not have to lift these heavy units over the top of the sides and then lower them safely down into place... this is very difficult to do and dangerous also. After the batteries are in place you can then use sheet rock screws to fasten this front side piece of your box.

The top edges of the boxes four side walls should be finished with closed cell foam (one side adhesive) gasket. The top cover of the battery box should be made from a smooth, flat piece of plywood that will slightly overlap three sides (all except the side which may butt up against a wall) to ensure an air tight fit. You can attach two handles on this cover to make it easy to lift on and off. There are many different ways to hold down this top cover to compress the gasket, here's a couple of examples: With weights evenly distributed along the top, or with locally available hardware which attaches to both the overhanging top cover and on the outside sides of the box.

Make all the necessary cuts through the walls of your plywood box before placing the batteries in the box. These cuts are usually done with a hole saw. You need access holes for the following:

- Electrical conduit 2" terminal adapter for the battery to disconnect / inverter cable conduit (available locally) about 2" above the tops of your batteries.
- 2" plumbing vent pipe for the in line exhaust vent fan, this should be placed high up on the side of the box, the top of this hole should be within 1" of the top.
- Intake hole for make up fresh air needed for venting. This hole should be located on the opposite end of the box from the exhaust vent pipe and should be lower down on the side of the box (an inch or so above the poly liner is good). This hole needs to be a minimum of 3", and should be screened off.

Battery Box Options:

- You can use see through Plexiglas for the top piece, and even for the front side piece. (This is a good idea when you are using the tall 2 volt Rolls cells because they have see through casings for viewing each cells electrolyte level) so you can see your cells without removing the cover.
- For mobile battery boxes, reduce the box dimension to 1" clear all around and install 1" bracing between batteries to keep them from tipping yet still allow air circulation.

