

# Safe, Quiet, And Economical Space Heater

“The idea has caught on all over the country since your original report years ago. It’s amazing,” says Harrold Andresen, about his simple do-it-yourself space heater that simply plumbs into a hot water heater.

He got the idea after moving into a house with no furnace. He soon noticed how warm it was in the closet that housed his hot water heater. So he plumbed a coil of copper to the hot water line, put the coil inside a short length of 6-in. flue pipe, and added a small

fan. The makeshift heater puts out 80 cu. ft. per minute of 95° heat, enough to add a lot of warmth to a home or cabin at minimal cost. Best of all, it’s clean, odorless and safe.

The Cozy Heater can be easily built in one day. Complete detailed plans sell for \$16.95.

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Reader Inquiry No. 06



Cozy Heater mounts on side of any hot water heater and plumbs easily into the water lines.

## New Air Dry Bin System Dries Corn For Less

Over the past 2 years, Ben Casper dried corn 4 to 6 points using 1/5 the energy of a conventional grain dryer. His Sectional Drying System (SDS) uses fans to push fresh air through specially vented bins to dry the crop. No heat needed.

“I blow air into the corn through 2 sets of perforated ducts,” explains Casper. “A second set of perforated ducts lets moisture escape out of the bin.”

Casper encircles the outside of the SDS bins with air tubes that deliver a steady flow through perforated tubes crisscrossing the interior. As it passes into the grain, the air picks up moisture and flows into layers of exhaust tubes to exit holes in the bin sides.

“Initially, I only had one exhaust layer with holes at the base of the bin with air also exhausting through the top of the bin, says Casper. “This past year I added an additional exhaust layer in the middle for more flow.”

There are as many as 80 to 85 input and exhaust holes in a 10,000-bu. bin. The number of holes and tubes increases with bin size.

The multiple layers create multiple drying fronts throughout the grain bin. In a 36-ft. deep, 42-ft. dia., 40,000-bu. bin, air will move only 9 ft. from intake to exhaust, compared to 36 ft. in a conventional floor dryer bin. As a result, SDS requires only a fraction of the fan capacity. Casper estimates a 24 hp fan capacity will provide 1 cfm/bu. with the SDS compared to a 180 hp capacity needed to push air through the floor dryer bin.

“I use only two 3 hp axial fans on a 10,000-bu. bin and four 3 hp fans on a 25,000-bu. bin,” explains Casper.

Casper is currently working with an engineer to determine airflow to convert a 55,000-bu. bin. He estimates conversion costs, including electrical work and construction and tube assembly, at about \$1.00/



Ben Casper’s Sectional Drying System uses fans to push fresh air through specially vented bins to dry the crop. No heat is needed. As air passes into the grain it picks up moisture that flows into exhaust tubes (right) that exit through the bin’s sides.



bu.

“Other in-bin drying systems are limited to short (20 to 24-ft.) bins, but the SDS system works with any height bin,” says Casper. “Stiffeners are required; however, either interior or exterior stiffeners are acceptable.”

Casper has converted bins on his family’s farm. Over the course of 2 years and many modifications, he dried 150,000 bu. of corn for a friend. He says he learned a lot in the process.

“There is extensive work that needs to be done inside the bin with the network of tubes,” says Casper. “To do it right, you really need my plans and experience.”

While a self-install might be possible using those plans, he advises using a professional contractor. He notes that even with a man lift and appropriate tools, installation on a 25,000-bu. bin can take up to a week and a half.

“I have applied for patents, and I hope to license or sell the design,” says Casper. “In the meantime, I am gearing up to produce parts to order. Let me know exact bin diameters and heights, and we can quote a price and begin the process.”

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