Arched Cabins Go Up Fast, Cheap

A request for a cabin by a client of blacksmith David Cruey is what resulted in the novel design for "Arched Cabins" which are spreading from Texas to Michigan and California to Florida. The cabins have been used for countless purposes from workshops and animal shelters to vacation homes and hunting lodges.

"Our customers can assemble the cabins themselves, but we build about 90 percent of the structures," says daughter-in-law Sara Cruey. "They go up quickly and then the buyer tackles the interior themselves."

The Crueys sell kits and build cabins that pop up in as little as a day once the foundation is in place. The unique design allows the builder to assemble one entire side of curved steel ribs with a base plate and a ridge plate before putting up the opposite side.

"Dave knew that curved steel is more structurally stable than straight steel and developed a process to bend steel ribs into their arched shape," says Cruey.

Once an insulation blanket has been added, sheets of roof paneling are laid over the top and attached to the ribs. Customized end caps are installed, and the cabin shell is essentially complete.

What a buyer gets is floor plates, ribs, ridge beam, R-13 insulation (R-25 upgrade available), Super Span Roof Paneling, trim and fasteners. Upgrades include a color upgrade on panels (26 colors offered), a fireplace thimble, custom loft and stairs. Foundation options include pier and steel beams or post and beam.

A 14 by 14-ft. cabin with a 12-ft. peak is priced at $2,800 for the base unit or $3,406 with all upgrades. A 24 by 40-ft. cabin with a 19-ft. peak starts at $12,800 or $14,960 with all upgrades. Shipping in the U.S. is priced at $2 per mile for 14 and 16-ft. cabins and $2.50 per mile for larger cabins. Installation is $1,000 per day plus travel costs, with the 12 and 14-ft. cabins taking as little as a day if the foundation is in place.

The company crew will do exterior rough-in that includes foundation, floor and joist decking and custom end caps (not including doors and windows) at an additional price.

"We will deliver to Canadian customers, depending on additional costs, but we ask other international customers to handle shipping," says Cruey.

You can see a video of an Arched Cabin taking shape at FARMSHOW.com.

Contact: FARM SHOW Followup, Arched Cabins, 1184 Dula Lane, Cypress, Texas 77429 (ph 832 930-2724; archedcabins@gmail.com; www.archedcabins.com).

Curved steel is stronger than straight steel, giving the do-it-yourself cabins tremendous strength, says designer David Cruey.

Roof panels come in 26 colors. Finishing options include a fireplace, custom loft, stairs, and much more.

Buy Or Build Your Own Phase Converter

Stan McDonald will build a 3-phase converter for you or tell you how to build your own. Three-phase electric motor driven tools cost less, are more energy efficient and last longer than single-phase motors. The problem is that retrofitting or installing a 3-phase system is costly.

"The converter turns a standard single-phase system into an artificial 3-phase system," says McDonald. "Three-phase equipment can often be purchased surplus and is of higher quality than new, single-phase consumer grade equipment."

Standard power cycles up and down with full power delivered at the peak in the cycle. It requires only 2 conductors (wires), a phase conductor and a neutral conductor. With a 3-phase system, 3 conductors each carry alternating current of the same frequency and voltage amplitude.

Power going through each conducting line is "phased" to reach its peak one third of the cycle behind and ahead of other conductors. This means that a motor is getting a more even supply of power than with a single line cycling up and down from peak to valley. It also means that a 3-phase line can carry 3 times as much power.

"The phase converter artificially generates the third leg of a 3-phase system using the 2 conductors of a single-phase system," says McDonald. "It's not a perfect transformation, but it gets the job done."

Converters have gotten the job done for McDonald, who started out with the goal of establishing a machine shop. He picked up heavy-duty 3-phase lathes, milling machines and more from schools that were downsizing their shop class offerings.

"I bought a lathe for $752, a vertical mill for $350, and horizontal mill for $650," says McDonald. "A new vertical mill would have cost something like $17,000, and a horizontal can cost $20,000."

One of his best deals was a 21-in. lathe that was 6 to 7 ft. long and weighed around 5,000 lbs. He got it for the cost of transporting it out of the school and to his shop.

"I brought it home, hooked a phase converter to it and was ready to go," says McDonald. "I made more on the first job I did with it than the transporting cost."

When he bought his first 3-phase mill, McDonald bought a commercial grade, static phase converter. When it didn't work right, he first called the company. When they didn't help, he tore it apart and found paper and cardboard in the converter, which he says is illegal.

"I built my own static converter, hooked it up and it ran great," says McDonald. "A customer saw it and said, why don't you build them, but I wanted to build parts, not converters."

In the years since, McDonald has added 3-phase equipment to his shop, some purchased and some he built himself (Vol. 26, No. 4 and Vol. 40, No. 6). He has also continued building phase converters.

"FARM SHOW readers who run bigger equipment should consider getting 3-phase motors to reduce their costs," says McDonald, noting that large 3-phase motors can be extremely cheap. "I got a brand new 15 hp motor still wrapped in plastic for $10 at a local surplus equipment dealer. I bought an industrial 3-phase welder for $25 because no one wanted it. It would have cost $8,000 new. I spent $75 for a rotary converter and another $100 in parts."

McDonald insists that the average person can build his own phase converter with surplus components. He will provide plans that outline what needs to be done or build a customized converter as needed. The cost varies with the type of converter, the size and voltage of the motor.

Stan McDonald says owning a 3-phase converter lets farmers buy heavier-duty industrial grade shop equipment, including lathes and milling machines.

"I just built a variable frequency drive for a guy with a 7 1/2 hp motor and oddball voltage," says McDonald. "It cost about $850, which is less than a conventional phase converter would have cost."

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Coolant Kit For 6.4L Powerstroke Diesels

Over the years Ford 6.4L Powerstroke engines have experienced problems with metal particles left from the engine casting process entering the factory oil cooler, the EGR cooler, and other important engine components. Mishimoto Automotive has introduced a direct-fit coolant filter kit for 2008-2010 6.4L Powerstroke models to help prevent clogging problems.

The kit includes an application-specific mounting bracket that places a precision machined 6061 aluminum filter mount and Wix coolant filter on the passenger side frame rail. The filter kit is routed in parallel with the flow path of the engine cooling system so a small amount of coolant is filtered in each pass.

Mishimoto includes 2 brass ball valves with the kit so changing the filter is a clean process. The kit also includes silicone hoses embedded with heat-resistant fibers that the company says are more reliable than rubber hoses used by the OEM. Hoses are offered in black, red or blue to complement the engine bay. The kit installs in about 45 min. with minimal modification to the factory rubber hoses.

Mishimoto also recommends installing a Performance Aluminum Radiator and a Powerstroke Silicone Coolant Hose Kit to further bulletproof a 6.4L engine. The company says using the kits in combination extends the life of a 6.4L oil cooler, water pump, EGR cooler, coolant and other components.

The coolant filter kit sells for $177, an aluminum radiator runs $945 and the cold-side pipe and boot kit is $260.

This coolant filter kit is designed for 2008 to 2010 6.4L Powerstroke engines that have experienced contamination from metal filings.

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