



Tabs in the molded plastic tops hold 2 by 4's in place.

Special "Tops" Turn Buckets Into Work Bench, Table

You can set up a work bench instantly with Handy Bucket Builder (HBB) bucket tops and 2 by 4 studs. The heavy-duty, hard plastic tops fit any standard 5-gal. bucket.

Flip a bucket over and set an HBB top in place. Set a second bucket in place, upside down over the first top, and place a second HBB top on it. Repeat once for a narrow two-column work surface. Repeat three times for a four square workbench. Rim tabs lock on the bucket edge lip. Set 2 by 4's in place, and screw or clamp plywood to them for a stable work surface or picnic table.

FARM SHOW recently tried out a set of HBB tops. With the 2 by 4's in vertical position, the workbench is 34 in. tall. In the horizontal position, the workbench measures out at a 32-in. height.

For simple handsaw or power saw work, two lengths of 2 by 4's one bucket high make a nice kneeling surface while cutting. They also make a quick bench when additional seating is needed.

While the company warns against using the system as scaffolding, the stability is exceptional. Tabs and bulges in the molded plastic help to hold the 2 by 4's in place. For added stability, the HBB tops have indents for toe-screwing the tops to the 2 by 4's. In the case of FARM SHOW's trials, bottom buckets were weighted with sand. This made for exceptional stability even when using only two sets of HBB tops.

HBB tops are available from a growing list



Hard plastic tops fit any standard 5-gal. bucket and, along with 2 by 4 studs, can be used to set up a work bench instantly.

of retailers who carry other products from the maker. They have a suggested list price of \$9.99 each.

Contact: FARM SHOW Followup, Bercom, 1709 Lake Drive West, Chanhausen, Minn. 55317 (ph 952 448-2766; toll free 877 464-1170; sales@bercomincorporated.com; www.handypaintpail.com).

Hydraulic Coupler Kit

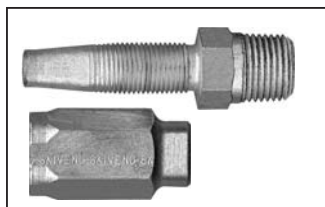
You can fix hydraulic couplings yourself with reusable, two-piece hose fittings from Do-More Hydraulics. While more expensive than having a hydraulics shop do the repair, time savings and ease of assembly make the couplings worth it.

"Hydraulics shops can justify the presses needed to crimp standard hydraulic fittings," says Henry King, Do-More Hydraulics. "However, in an emergency or when the shops are closed, you may still need to repair a problem coupler. These fittings will do the job."

King began selling the couplings a year ago. When he began farming 20 years ago, he used similar couplings all the time. After going to work in a hydraulics repair shop, he noticed they didn't even keep the reusable couplings in stock. After talking with other farmers, he decided to start offering them himself along with replacement hydraulic hose and other related items.

"With the two-piece option, you can buy ahead and do emergency repairs yourself," says King.

The fittings consist of a simple socket that



Reusable, two-piece hose fittings allow you to fix hydraulic couplings yourself.

screws counterclockwise into the hose end. An insert is then screwed clockwise into the socket.

Hose fittings are priced by the size and type of hose. A 1/4-in. single wire hose coupler costs \$12. A 3/8-in. single wire hose coupler costs \$13.57, and a 1/2-in. single wire hose coupler runs \$15.58. A 1/2-in. double wire hose coupler costs \$17.72, and a 3/4-in. double wire hose coupler is priced at \$20.50.

Contact: FARM SHOW Followup, Do-More Hydraulics, LLC, 1026 Deaver Rd., Quarryville, Penn. 17566 (ph 717 284-3867).

Grooving Heads To Save Fuel Catching On Fast

As gasoline hovers near \$4 a gallon, everyone paying at the pump is looking for ways to economize. In the past few years FARM SHOW readers have written us describing how a simple process of "grooving heads" can cut fuel use by 20 to 40 percent. FARM SHOW reader Frank Akins of Leavenworth, Kan. wrote that a friend of his had grooved cylinder heads on his Dodge 360 cu. in. race car engine (Vol. 32 No. 1). He experienced greater mid-range torque and better fuel efficiency. John Schrock, a repairman from Jamestown, Penn. and his uncle Robert grooved pistons on an Imperial Diesel and saw 25 to 30 percent fuel savings. Robert also ground a 3/32-in. deep by 1/16-in. wide groove in heads on a small diesel engine and says, "I figure I gained 50 percent more power."

Fred Balk, a retired millwright in Michigan, contacted us recently and said he has used the grooving process on three Cub Cadet KT17 engines. "I put the heads in a Bridgeport milling machine at a 2 degree angle. I use a 1/16-in. ball nose end mill and put a shallow groove at the squish area and deeper toward the center."

Balk says the first heads that he grooved were on a Cub Cadet 782 that was very difficult to start, especially in cold weather. "After I did the grooving, we couldn't believe how well it started. It turns over once and pops to life." Balk has since done two more KT17 engines with the same results and will be grooving an Onan engine this summer.

"This process has been around quite a few years," Balk says. "In fact there's a patented process claimed by an Indian engineer Somender-Singh (www.somender-singh.com). I've heard of people in the drag racing and high performance car business that have done it with good success," Balk adds.



Grooved cylinder heads are said to boost power and result in better fuel efficiency.

Somender-Singh claims that additional nitrogen being squeezed through the grooves disperses the combustible oxygen molecules more efficiently into the fuel. That efficiency leads to increased torque, increased low-end power, and overall fuel savings with lower emissions. Engines burn cleaner at lower operating temperatures and the capacity for a more efficient engine without the dreaded "Mr. Knock" or "Miss Ping".

Somender-Singh writes that "this simple but radical design change to squish areas and configurations enhances progressive turbulence in the charge close to the skin of the combustion chamber and further directs the (added) turbulence toward the igniter followed by multiple flame front propagation."

That's a complex technical explanation for a laymen's benefit that shows more power and fuel savings of up to 42.5 percent. Balk agrees with that assessment and says if more people are interested in having it done, "I'll have to change it from a hobby into a part time business."

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Where To Get A Custom Exhaust System

Heartthrob Exhaust is in the business of bending tubes for exhaust systems. Their high-flow kits can improve hp output on diesel trucks or simply change the sound or look on cars and trucks. However, if you need a tube bent, shrunk, or expanded for any other reason, they can probably do it for you.

"We have the capabilities to make almost anything out of tubing," says John Forbes, Heartthrob Exhaust, Inc. "We do industrial work for different companies, including a lot for Cummins Engines. We've done overhead conveyor systems for barns and playground equipment for parks. We have a bender that can do arcs of 10 ft. on 4-in. tubing."

While such custom work is a big part of the business, exhaust system kits and components are still the core. Heartthrob makes DPF-Back diesel exhausts as bolt-on kits for older GM, Dodge and Ford trucks. When combined with upgrade chips for more hp, the tubes offer a minimum of 100 cfm increased flow.

"Earlier models were getting big hp gains with upgraded chips and our exhaust tubes," explains Forbes. "They can't be used on newer models with their particulate traps, sensors and computer management systems."

Exhaust kits for newer models have shown modest hp increases on Ford and Dodge trucks, but better improvement on GM Duramax 2007 through 2010 models. All kits are EPA legal, as they keep the DPF and catalytic converters on the truck and do not void warranties. However, they do eliminate the muffler, which can be a concern in states



High-flow exhaust kits can improve horsepower output on diesel trucks or simply change their sound or look.

requiring mufflers.

The company also makes Deep Tone Dual kits for trucks; CAT-Back kits for older and newer cars and trucks; Flowpack Performance exhaust kits for late model muscle cars; and a variety of other exhaust systems.

Products and services include custom mufflers, water jet cutting and a wide range of specialty design and fabrication tools.

"Frankly we are not sure where most items we make end up," says Mike Forbes, Heartthrob Exhaust, Inc. "Some of it's on ag equipment, stand alone power generation units, off-road specific purpose vehicles and military vehicles. We even do a lot of fixes for local farmers, such as reproducing a worn-out exhaust."

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