



When the bolster on front of his IH tractor broke due to an overloaded forklift, Arthur Kidder made a heavy-duty repair that's strong enough to carry nearly any load.

Bolster Repair Fixes Broken IH 454

Arthur Kidder doesn't worry about overloading his tractor's front-mounted forklift anymore. His bolster repair is heavy enough to carry nearly any load.

"I was having my house reroofed, and the crew overloaded my forklift with bundles of shingles," says Kidder. "The hydraulic lift on my IH 454 picked it up, but when I tipped it to dump the load, the shifting of the weight was too much for the front end."

The bolster that ran under the front of the engine broke, and the frame twisted on Kidder's tractor. Finding replacement parts

wasn't easy.

He decided to double up on support. He had 3-ft. lengths of 1-in. steel cut to fit over and reinforce the bolster. The wings, as Kidder calls them, are about 3 1/2 in. wide over the bolster where they bolt onto the front of the engine block. At the rear, they are about 9 in. wide where they bolt onto the side of the transmission housing.

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Metal Fabricator Markets His Metal-Working Tools

If you do a lot of metal work, Swag Off Road may have the tools you need. Swag specializes in developing add-ons that let you do more with the tools you have. Products include the Portaband Table for use with hand-held metal cutting bandsaws, brake kits and tubing roller dies for Harbor Freight hydraulic brakes, tubing rollers, and more.

"I'm a mechanical engineer by training, and when I need a tool in my metal fabrication shop, I make it," explains Troy Rutherford, Swag Off Road. "I'll make another 10, and if they sell, I put them on my website. Every tool is designed, made and tested here in the U.S. They are designed for the shop/garage fabricator, but are able to withstand industrial use."

Rather than build a tool from scratch, he often takes a low cost, easily available one and enhances it. A good example is the \$180 Harbor Freight Tubing Roller, which Rutherford says is in a league of its own based on one simple principle...price.

"We improved it and added dies so it can roll many different shapes and sizes of material," explains Rutherford. "It comes with 3 round tube dies, and we offer 19 different sizes and types that include stock round tube dies, square dies and round pipe dies, as well as a universal edge roller for rolling flat bar on edge."

Enhancements to the roller include modified drive axles, center drive roller, and weld-on wings that make rolling larger diameter and heavier-wall materials possible and easy. The company also offers a low-cost tube bender digital readout accurate to 1/10 of a degree. It works on a variety of tube benders — manual, hydraulic and air/hydraulic.

Die sets are priced at \$164.95. The digital readout is priced at \$79.95.

Another example of making a good tool better is the Portaband Table. It works with a variety of popular hand-held metal bandsaws and can be adapted to more. It quickly turns



Swag Off Road specializes in developing add-ons that let you do more with the tools you have. Products include tubing rollers (left) and brake kits.



a portable bandsaw into a vertical unit. Rutherford offers 4 different models, from a very simple early design to a more refined and feature-filled version. Prices range from \$44.95 to \$109.95. Accessories include a 15-amp power foot switch, Ryobi Miter Gauge Assembly, and a bolt-on Miter Gauge track.

Other Swag Off Road products vary from DIY builder kits for 12 and 20-ton Harbor Freight hydraulic press brakes to a simple wall-mount for disk grinders.

To see some of the tools in action, visit www.farmshow.com and link to the videos. Printed information on many of the tools is also available on request. Rutherford asks that a stamped self-addressed envelope be included with requests for a brochure to speed the process.

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Jibs Make Light Work Of Heavy Lifting

"They work great to lift heavy parts and equipment," says Andy Hall, who operates an on-farm repair and welding shop on his family's farm near Butterfield, Minn. "When we put up a big new shop, the first thing we did was build several jibs like we had in our old shop. I use one of them in the welding shop, my brothers Mike and Tony have 5 in their machine shop, and we've got another one in the service bay where we work on cars, trucks and tractors."

The jibs are strategically located throughout four service areas in the 10,000 sq. ft. building. The horizontal arms rotate smoothly on 8-bolt heavy-duty wheel hubs bolted onto the top of vertical posts. They're positioned to lift and move heavy parts anywhere in the building, yet not interfere with door frames, ceiling fans or another jib.

"We drew up everything to scale on paper before the floor was poured," says Andy, "and everything worked perfect once they were all in place."

Four of the jibs are the exact same design, with each leg made of 13-in. dia. by 1/2-in. tube steel. Those legs hold a 10-in. by 6-in. I-beam used for the horizontal arm. A 6-ft. support brace is made from 5 by 7-in. tubing. The large jibs are 14 ft. tall. Two other jibs are the same design, but use a smaller I-beam because they lift lighter parts in Tony's performance machining shop. Mike uses a shorter 8-ft. jib in the room that houses his turning lathe.

The base for each of the jibs is a 36-in. dia. plate that's bolted solidly to the concrete floor with six 3/4-in. machine bolts. Six gussets welded to the plate and to each vertical leg provide lateral support in every direction.

Each jib has a 1,300-lb. electric hoist that rides on its horizontal I-beam. The hoists are equipped with a 1 1/2-hp motor and a tethered remote so the brothers can lift and



Andy Hall and his brothers Tony and Mike built jibs to lift heavy parts in their on-farm welding, repair and machining businesses.



move heavy parts anywhere in the shop. The brothers agree that having several jibs located throughout the shop allows each of them to work independently and not always ask for help anytime something is too heavy to lift by hand.

All of the jibs are painted bright red, giving the appearance of giant cranes hovering over tall buildings. They stand out against the white interior shop walls. The jibs cost about \$500 apiece for materials and took about 8 hrs. to build. "They save us a lot of time and let us move heavy parts and pieces anywhere in the shops," says Andy.

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Mini Van Repowered With BMW

Jacob Kraybill repowers cars and trucks with Cummins engines on a regular basis, but he's only repowered a mini van with a BMW engine once. He bought a 1999 Ford Windstar with a blown engine and a bad transmission. The BMW engine, one of fewer than 500 ever made for use in Lincoln Mercury's, fit perfectly.

"The BMW even has Ford stamped on the valve cover," says Kraybill. "I found it in a 1985 Lincoln Continental that I got for the scrap price of \$250."

He pulled the engine, got it running and slipped it into the van. It was a 2.4L, inline 6 diesel with turbocharger. He rebuilt the truck's transmission. While the bolt pattern on the transmission matched up with the engine, Kraybill still had to make an adapter plate to mount the starter that had been in the transmission. He also had to make a new nose cone bushing for the torque converter.

"It had an 11-in. flywheel, flexplate torque converter, overhead cam and timing belt," recalls Kraybill. "It was an engine that was way ahead of its time."

The BMW is transverse and was shorter than the original Ford. As a result, he had to carve some space for it on the passenger side and shift the engine and transmission to the driver's side.

"The redline on those engines was 5,350 rpm's, extremely high for a diesel, but the Windstar gearing was plenty high for it," says Kraybill. "It cruised smoother at 75 mph than it did at 55. I should have reset the turbo as the efficiency never panned out as I had hoped. The best I did was 30 mpg."



Jacob Kraybill bought this 1999 Ford Windstar with a blown engine and repowered it with a BMW engine, one of fewer than 500 ever made for use in Lincoln Mercury's.



Kraybill says he has slipped Cummins engines into a Toyota pickup, a Ford Ranger and done other repowering, but the Windstar/Lincoln Mercury/BMW was unique.

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