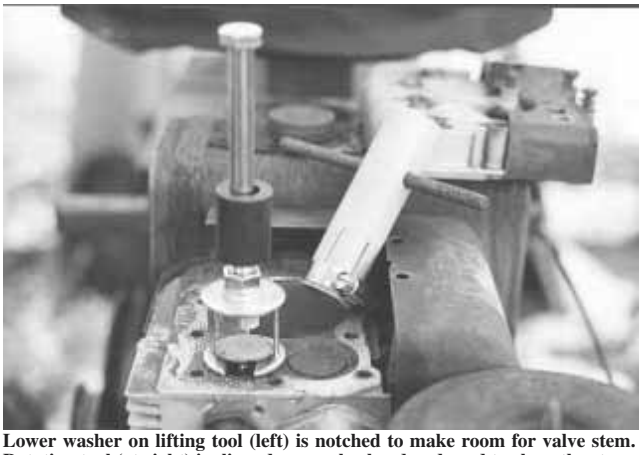

Lower washer on lifting tool (left) is notched to make room for valve stem. Rotating tool (at right) is slipped over valve head and used to clean the stem.

Home-Built Tools Free Stuck Valves

"When exhaust valves stick on L-head type air or liquid cooled engines, I use a pair of simple low cost tools that I made to lift the valves and lubricate the stems," says Chester Clark, Ewing, Mo. "They let me free stuck valves quickly without costly valve removal, grinding, and readjustment. Works on smaller air-cooled engines such as Briggs & Stratton and Wisconsin, which have valves in the block and not in the head.

"One of the tools is used to lift the valve and the other for rotating. The lifting tool is made from two flat washers about 1/16-in. thick. The lower washer is notched to make room for the valve stem. It slides under the valve head. I welded three 1 1/2-in. long spacers vertically to the edges of the washers - two opposite each other and across from the center line of the hole and the other opposite the notch on the washer - to form a valve head cage assembly. A small slide weight is placed on a 6-in. long bolt, then a nut is threaded on so that a 3/4-in. length of threads is exposed. Then the bolt is inserted into the top washer on the lifter and tightened with another nut.

"The sliding weight is then used to pull the valve.

"The rotating tool is made from a short length of plastic pipe or PVC conduit which is sized to just slip over the outside diameter of the valve head. I cut 6 or 8 equal spaced slots 1 1/2 in. deep into one end of the pipe. I drilled a 3/8-in. dia. hole through both sides about 1 1/2 in. from the other end of the pipe. Then I slipped a radiator hose clamp over the slotted end and tightened it lightly to keep it on the pipe.

"I clean and lubricate the valve stems when the valve is in the maximum lifted position. Since it is usually the exhaust valve that's stuck in the 'up' position, I rotate the engine until the piston is just past top dead center on the exhaust stroke for that cylinder. I apply a small amount of lubricant or other loosening agent to the stem. Then I slip the notch of the lifting section of the tool under the valve head. The slide hammer action will free the valve and overcome the valve spring tension. The cleaned area on the stem should extend 1/8 in. beyond the normal travel range. Remove the lifting tool.

"Again apply a small amount of loosening agent to the stem. Slip the rotating tool over the valve head and tighten the clamp. Insert a bar or screwdriver shank through the holes. Use a repeated 30 degree rotating and lifting action to thoroughly clean the stem. Repeat this operation until the spring always returns the end of the stem back down onto the lifter from the extended travel range. Repeat the previous steps several times on all exposed valves. Rotate the engine crankshaft several times to cycle the valves and check for any sticking.

"This procedure usually requires less than a half hour and restores an engine to its original operating condition."

Contact: FARM SHOW Followup, Chester L. Clark, 840 County Road 115, Ewing, Mo. 63440 (ph 573 439-5918).

Draft Sensing Pin Eliminator Kit

If you've ever had problems with the 3-pt. draft sensing pin on your Case-IH Magnum tractor, you'll be interested in a new draft sensing pin eliminator kit invented by John Boersma of Cannon Falls, Minn.

Magnum series tractors come equipped with an electronic 3-pt. hitch with a draft sensing pin. If the pin fails, the 3-pt. hitch isn't usable. Each pin costs about $500 to replace. Boersma has developed a circuit that plugs into the tractor wiring harness in place of the draft sensing pin and allows the hitch to be used in the manual mode.

Fits Case-IH Magnum 71, 72, and 92 series Magnum tractor models.

The kit sells for about $100 plus S&H.

Contact: FARM SHOW Followup, Ag-Electronics Repair, 36355 Co. 14 Blvd., Cannon Falls, Minn. 55009 (ph 507 263-5515; fax 0211).

Roth uses a come-along to adjust height of A-frame stands that support both ends of a big I-beam crossbar.

Adjustable Height Overhead Hoist

When Illinois farmer Fred Roth built an overhead lift hoist for his shop, he came up with a design that makes it handier to use than any other hoist he's seen.

The hoist consists of a large I-beam cross bar supported at either end by A-frame stands. What makes the hoist unique is that the A-frame stands adjust up and down so he can raise or lower the crossbar as needed, depending on the job.

Roth uses a come-along to adjust height of either stand. The come-along is hooked to steel cable that raises the lowers the single upright that supports the crossbar. He raises or lowers them when there's no load on the hoist, and then pins the uprights into place for lifting. A chain hoist rolls back and forth on the I-beam crossbar. He used heavy-duty thrust bearings from a tractor engine as dolly wheels on the frame that holds the hoist.

A chain hoist rolls back and forth on the I-beam crossbar.

Contact: FARM SHOW Followup, Fred Roth, Rt. 2, Darlinville, Ill. 62626 (ph 217 854-8634).

Slide-In "Service Body" For Pickups

A new "service body" for pickups is designed to quickly slip into place without any modification to the truck and can be just as quickly removed when it's not needed.

The "Load 'N Go" measures 8 ft. long, 6 1/2 ft. wide at the top, and 41 1/2 in. high. It's equipped with a heavy duty diamond plate floor covered by a spray-on liner, an expanded metal bulkhead, and two compartments with adjustable shelves and pneumatic door assist shocks on each side. An 8-ft. long slide-out drawer on back is optional.

The unit bolts to six mounting blocks that clamp onto the pickup bed rails. No drilling is required. Forklift tunnels at the back are used for mounting and removal. Or, you can use four 2,500-lb. capacity lifting jacks (optional) to raise the body off the pickup and drive out from under it.

"As far as I know it's the only removable service body on the market," says Steve Williams, Titan Truck Equipment, Spokane, Wash. "Simply remove the tailgate and open the rear compartment door and you have access to the forklift tunnels. The jacks are inserted into mounting tubes at all four corners, allowing the body to be lifted similar to a pickup camper.

"It actually has about 25 percent more storage space than a standard 8-ft. utility body. The bed area is 48 1/2 in. wide so it can accommodate full 4-ft. wide sheets of plywood. The optional slide-out rear drawer is 90 in. long, 41 in. wide, and 7 1/2 in. high and has a capacity of 1,000 lbs. It comes with adjustable dividers and a rubber mat."

Fits any full-size pickup. Standard long and short bed models are available. The unit comes in a standard white color but can be painted to match most factory colors for an additional charge.

Other optional equipment includes a ladder rack, material rack, roller top, side compartment slide-out drawers, hotstick compartment inserts, and a removable tailgate.

Sells for about $4,700 without jacks; $5,350 with them.

For more information, contact: FARM SHOW Followup, Titan Truck Equipment, N. 605 Fancher Rd., Box 13056, Spokane, Wash. 99213 (ph 509 534-5010 or 800 445-4807; fax 509 535-4320).

"Service body" slips into place without any modification to pickup and can be quickly removed when not needed. Note compartments and optional slide-out rear draw.