



Home-made rig, which cost \$300 to build, can pump up to 5,000 gal./min.



Portable pump is backed into water so its wheels and impellers drop below the water surface. Photos courtesy Texas Farmer-Stockman Magazine

\$300 RIG PUMPS 5,000 GAL./MIN.

Home-Built Pump Moves Lots Of Water

By Frank Buckingham

If you need to move a lot of water a short distance and do it fast, without spending a bundle of money, why not build your own pump like Bob Hodge, of Bonham, Texas did.

Hodge raises peanuts, cattle and catfish and often needs to move water from one catfish pond to another, or from a pond or lake to an irrigation ditch. His first home-built pump moves 5,000 gals. of water per minute and cost him only \$300 to build. He figures a commercial pump of comparable capacity would have cost him "at least \$3,000". He built a second home-made pump that moves 4,000 gal. of water per minute.

"Most any farmer could build one," says Hodge who, with help from his son Craig and employee Danny Skidmore, started with the rear end of a Ford car, added a 5-speed transmission from a junked International truck and some standard irrigation pipe to a pair of home-made impeller pumps. The

differential was locked up so both sides turn together, and a 20 in. dia. disk of 1/2 in. thick steel was cut for each impeller.

"The disk has to be heavy steel," says Hodge, "or it will warp when you weld on the impeller blades." The blades were made of 12-ga. steel and curved "about 20% of a circle" before being welded on each side of the heavy disks. The disks were centered and holes cut with a torch to permit attaching the impellers to the old wheel hubs. Hodge says he didn't have a plan for the impellers but just made them about like others he had seen.

After the impellers were mounted, a 12-ga. steel housing was built around each one and tapered to an 8 in. circle for attachment of an 8 in. irrigation pipe coupler. (The second pump he built has 6 in. pipe. Hodge originally planned to use larger pipe but decided weight of the pump and water would be too much.)

Although the differential housings were sealed, underwater operation does permit some water to seep in. Therefore, Hodge recommends loosening the cover plate or removing the drain plug about every tenth time the pump is used to remove any accumulated water.

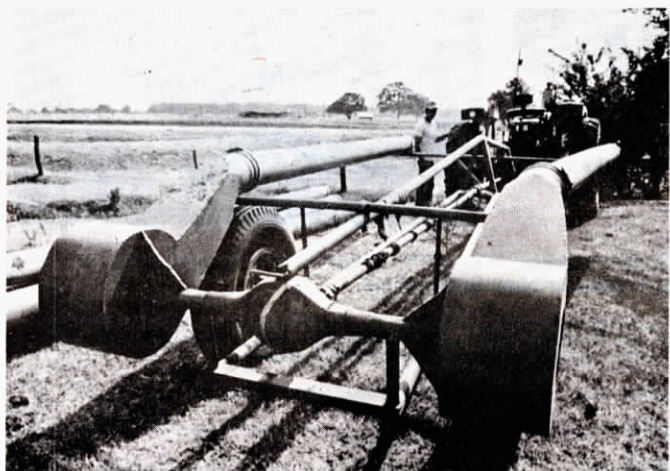
A shaft from the tractor pto is connected to the back end of the transmission. The shaft, salvaged from the front end of the truck transmission, slants upward slightly to a U-joint and bearing, which in turn is connected to the old car rear end by a long drive shaft. The arched drive train permits the drive shaft to clear the hump at the edge of ponds or ditches as the pump is moved into or out of the water.

The pump frame is about 20 ft. long to permit backing the pump into a pond or stream while parking the tractor on the bank for easy pumping. Pipe racks on the pump frame make it easy to transport the irrigation pipe

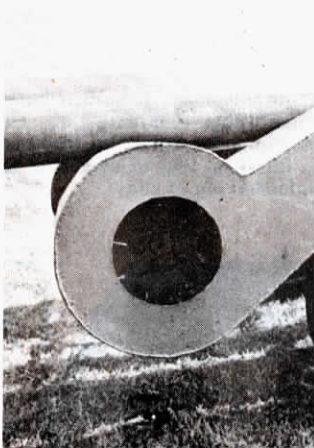
used during the pumping operation.

With the transmission in third gear, the larger pump can deliver up to 5000 gpm and requires about 75 hp, depending on the height and distance water is being pumped. The smaller 4,000 gpm pump is usually operated in second gear with a 40-50 hp tractor. Both home-made pumps will lift water about 20 ft. and push it as far as 200 ft., says Hodge. He believes the pumps could also be used to pump liquid manure from an outdoor pit or lagoon.

The pumps are regularly used to pull water from a channel Hodge dug from a nearby pond to fill his catfish ponds. Before building the pumps, he used a 6 in. irrigation pump which moved less than 2,000 gpm, and required 5 to 6 gal. of LP-gas per hour. Now, he uses 4 gallons of LP-gas hourly to move up to 5,000 gpm the same height and distance.



Hodge used truck wheels, auto rear end and a truck transmission to build his high capacity pump.



Impellers, made from a 20 in. dia. steel disk, attach to the hubs of tractor wheels.



Tractor PTO shaft hooks to back end of this 5 speed truck transmission.