

# Build a Hydraulic Lift For Your Tractor

At a cost of about \$10, the author added versatility to his vehicle. Here's how you can do the same



By MAURICE ORLAREY *Technical Art by Peter Trojan*

**L**IFTING a heavy bulldozer blade manually is for the birds even when it's only a fairly small one on a garden tractor. Pulling a lever to raise and lower the blade can make you arm-weary after only a few hours of grading or snow pushing. That's why I decided to do it the easy way and add a hydraulic lift so a mere push of a button would lift and lower the blade. Now I feel like a big-time heavy-equipment operator!

The first step I took to add this push-button convenience was a trip to the local junkyard to pick up the power

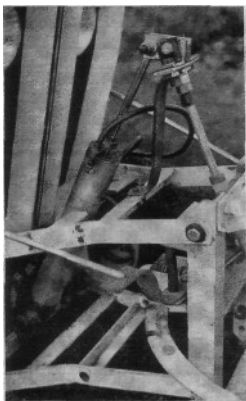
unit—a hydraulic system from the convertible top of a car. (The one I selected happened to be from an Oldsmobile.) For a total cash outlay of \$10 I purchased:

- Motor, pump, reservoir unit.
- Cylinder with bottom plate.
- Hydraulic hose.
- Wiring and dashboard switch for above motor.

Since at this point I wasn't sure whether one cylinder would provide enough muscle for the job, I also bought the second cylinder (manufac-



**CYLINDER BOTTOM ARMS** are attached to plate with bolt and to cylinder with shaft, washer and cotter pin



**BLADE RESTING ON GROUND** exposes  $\frac{1}{2}$ -in. threaded rod. Extended down, it allows room for adjustment

turers use two per car) for an additional \$2. As it turned out, one cylinder was sufficient. It will, in fact, effortlessly raise and lower the blade at a touch of the button, even with an average-size male sitting atop the blade.

Recognizing that prices can vary and probably will, depending upon the number of junkyards in a particular geographical location, a visit to your local junkyard for a materials price quote before starting the job is a practical approach.

Some changes on the manual lifting unit were necessary so that the cylinder could be fitted in place. First, I had to disassemble the lifting lever and linkage that connects it to the upper-lift frame. Then, using  $\frac{1}{4}$  x  $1\frac{1}{4}$  x  $14\frac{1}{4}$ -in. flat iron, I made a flat brace (Detail F) and fastened it to the tractor as shown on page 173. Finally, I fastened the cylinder base to the upper and lower braces.

The cylinder that I bought came equipped with a base plate which was adaptable to my tractor when bottom arms were added. If this part is missing on the unit that you purchase, you can make the alternate base plate shown in the lower left-hand corner on page 173. With this version, the bottom arms can be eliminated since the cylinder-holding U-

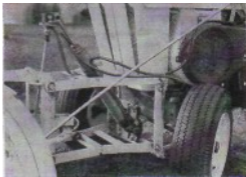
channel provides ample swing-clearance.

The motor-pump reservoir unit fits snugly under the tractor hood (see drawing shown above). On my rig it had to be positioned on the top left side of the engine between the air cleaner, gas tank and left headlight. To make room, it was necessary to move the air-cleaner cover slightly to the right.

Current draw is given at about 35 amps, which is no problem for my 12-v. heavy-duty battery. The "on" time is very short since the blade is lifted at a speed of roughly 2 in. per second. If your blade doesn't stay up, due to slow leakage through the pump, it can be corrected by stiffening the pivot points of the upper and lower frames by inserting spring lock washers under the bolt heads.

All of the dimensions shown were determined by trial-and-error fitting as I built the lift to suit the tractor (Sears 10-hp XL). For other makes I would recommend experimenting with cardboard and/or plywood templates to check for fit and clearance before cutting, shaping and welding the iron.

Working at a leisurely pace, I completed the setup in my spare time. I'm so pleased with the results that I feel it borders on understatement to say that my effort was worth every minute. \* \* \*

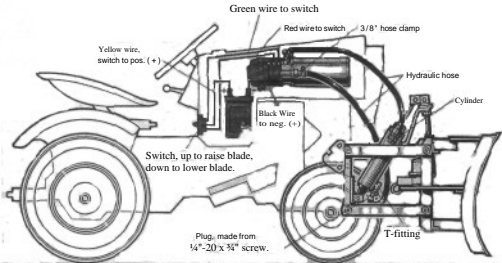


WITH THREADED ROD almost vertical, floating arm position indicates that the blade is free to float.



POWER UNIT fits neatly under hood on engine's left side when air cleaner was moved slightly

## ELECTRICAL AND HOSE CONNECTIONS



AFTER CUTTING HOSE to unused second cylinder, plug T-fitting with 1/4-in.-diameter bolt and 3/8-in. clamp.

# HYDRAULIC LIFT

