

How much time does it take to install a 10kw with hydraulic tower?
How much does it cost to install?

People required: Two to three

Foundation:

Dig hole: 13.5' square and 3' deep, trench to equipment shed. About 2 hours.

Put foundation bolts in the jig, put in all rebar and make the small box (two 2x12 boards) took 2 guys all day. 16 hours.

Pour foundation: About 3 hours for two guys. 6 hrs

All the rebar will be cut, bent, and delivered in the same container with the turbine and tower.

Concrete was 24 yards at \$105/yd here.
Equipment shed provided by owner.

Turbine installation:

Our first time, it took us 10 man-days. This is 5 days for two guys from the day of the container arrival- to unload, sort, assemble the tower sections, attach the turbine, install blades, anemometer, install the hydraulics, run wires, install the two protection boxes two dump loads and two inverters, install the distribution (std breaker panel) and wire into meter.

Tools and equipment needed:

Hand tools, sockets, torque wrench to 250lbs, elect drill. Concrete stinger (vibrator) rebar twist tools speed things up a lot. A few 8/8/16 concrete blocks to break up and make doby blocks, ground wire #4 copper x 25', conduit to suit job, Misc electrical boxes and wire \$250

Helpful but not necessary is bucket loader with forks attached to the bucket. Bucket forks are about \$300 if you need to buy them on the Internet. This makes it easier to get the bolt cage to the middle of the hole. A couple of guys can wrestle it to center if it is lowered on the edge by the forklift. A 10' box beam to slide over one fork of the forklift will do the same thing.

A forklift will do the entire job without the bucket loader. It is easier if both are on the job.

Hydraulic cylinders and portable pump:

Only ONE set is needed, unless you want to leave them on each job. The two cylinders detach in a few minutes with quick disconnect hoses and pins. They can go to other jobs this way. Once the tower is up, it is very unlikely that you will have to lower it again. The ladder and work platform are much quicker and easier to make small adjustments, checks or repairs.

Most tractors have attachment points for accessories. If you have one, you can plug the cylinders to the tractor. If not, the portable unit is very nice, and has the added safety bonus of a pressure gauge that will allow you to see what is happening. Buy the portable hydraulic unit if you plan to install more than one turbine. It's good for service in the future, so you don't have to find a tractor.