

Bill of Materials for Backhoe:

STEEL – Approx \$800

Steel Tubing - 3 x 3 x 1/4"
6-pieces, 6-feet long
For Parts - A,C,F,G,J

Steel Tubing - 2 x 3 x 1/4"
3-pieces, 8-feet long
For Parts - B,D

Steel Angle - 3 x 3 x 1/4"
1-piece, 6-feet long
For Parts - H,J

Steel Bar - 3 x 1/2"
3-pieces, 8-feet long
For Parts - A,C,E,F,G,J

Note - you might want to have the 20-4" tabs for parts F,G,J cut by the steel mill to save yourself a bunch of cuts. Making those was a real boring pain in the Axx. If you do that you will only need 2-pieces, 6-feet long for the other parts A,C,E,F.

Steel Bar - 2 x 1/2"
2-pieces, 6-feet long
For Part - H

Flat Steel Plate - 12 x 12 x 1/4"
2-pieces
For Part - C

Flat Steel Plate - 12 x 30 x 1/8"
1-piece
For Part - H

Flat Steel Plate - 12 x 18 x 1/8"
2-pieces
For Part - H

Flat Steel Plate - 10 x 18 x 1/8"
1-piece
For Part - H

Misc. scrap steel, pipe, and hardware scrounged for various brackets and to mount the valve assembly.

HYDRAULICS – Approx. \$2000 (You can save a bunch of money if you can buy used.)

6 - Double-Acting Cylinders 2" x 16", 2500 – PSI

1 – 11-GPM Prince PTO Pump

1 – 10-Gallon Oil Tank

1 – Six-Way Valve Assembly

Hose to each end of all cylinders from valves. Measure on finished machine and buy custom lengths or make up from closest pre-manufactured lengths available (much cheaper). Lines should have a swivel fitting at one end.

Suction and return lines for pump and valve from tank, return line filter, suction strainer, etc.

10-Gallons of Hydraulic Fluid - Select based on your preference and temperature range you work in.

Misc Hardware and Accessories – Approx. \$200

Bolts with nuts and washers

12 - 6" x 5/8"

For hinge points

My bolts ended up being several different lengths where I added extra reinforcement of some joints so 6" length is average. Diameter is also approximate. Buy what you are comfortable with considering the work you plan to do with the backhoe. Keep in mind that the best you will probably be able to find is grade-5 hardware. If you buy hardware from some place like Lowes, it will probably be un-graded. I also cut-off and re-finish the ends of all my bolts so they match the Ford N-tractor spec for minimum number of exposed threads to catch on stuff.

Long Bolt with nuts and washers

1 - 10" x 3/4"

For main horizontal hinge point between parts A and D

Pipe sleeves for hinge points

Just get about 8-feet of black iron plumbing pipe that will slip-fit over the bolts.

This pipe will allow you to tighten the bolts without pinching the hinge point if they are carefully cut just a smidge longer than the pieces they are going through. I cut mine and then squared the ends on my grinder.

If your hydraulic cylinders do not come with pins for each end, you will need to buy some of those. One end of several cylinders will get a bolt and pipe-sleeve type of connection.

Cut-off discs for saw (I used a 10" chop saw for most of the cuts)

Grinding Discs for grinder (an angle grinder comes in handy for cleaning up the really bad welds or tack welds that were in the wrong place).

Welding Rods

Primer and Paint