

## General

First read the instruction. If all is clear then cut out all pieces for the step, then fold them and hold them together. If this is correct and works out, then glue.

If you encounter a problem or some mistake in this model, so please feel free to send me a mail ( [chriess@vr-web.de](mailto:chriess@vr-web.de) ), referencing to this model. I answer it as soon as possible.

Also if my misspelling is so big, as you get nightmares.

## Tools

Knife

Glue

Scissor

Patience

Music & a good Drink ;- ) I prefer ..... uhm – are you mature ?

## Some words to the model

Some sheets are to be printed out more than once. (e.g. Tires-sheet ). Read the instruction before. Also read ? (Uhm good word for) the parts. Print out some spare-sheets if you think they are difficult to build or cut, or even if you thing the instruction is badly writing ;-). (And write a mail ...)

All parts for the step should be inside a outlined box on the sheets.

If you see a red X inside a part, then this is a area to be cut out.

If you see one or more parts outlinded with red lines, so this means this are parts which aren't seen from the outside. ( e.g. internal structure of the model )

Grey lines are construction-lines, they could help to cut, bend and fold.

If you see a big colored area beside some parts, with a small red line in the middle, this means, fold and glue the parts to the area. Cut this parts after the glue is dry. (This are parts, that are seen from both sides, so they need a colored backside.)

## Not used Parts

all in use, except the diagonal supportors in the frame. (nothing to support, but they are really there)

## Model-Pages

32 Pages, Page 2-5 printed twice.

14 Pages of Instruction

## Rotatingassembly 1

Cut out the Parts [3 Parts]  
Glue together. The ring should overlap the glueingflaps.

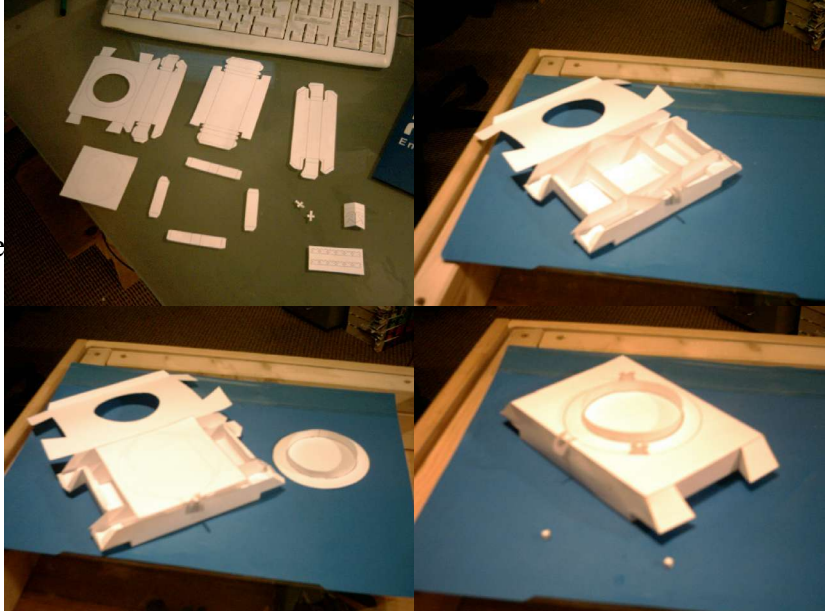


## Crawler

Cut out the parts [12 Parts]

Glue the 3 biggest parts together and then check to check. Then the 4 stiffeners, level to the top. (look at the square part to get a hint :- ) insert the hook.

Glue the square atop. This is the gliding surface for the rotating assembly you have built. Close it with the rotating assembly inside, glue the scissors at the printed circle. Glue the cubes, they are opposite of the scissors at the underside of the frame. You build it later. ( Believe me, i'am serious :- )



## Tracks

Cut out and fold the parts [9 each side]

Be aware of the glueingflaps of the internal parts, they need to have a small angle.

Cut out and glue the small parts [ also 9 parts each side]



Take the rails and glue them together, also put the cylinder and the hook in place.

You need a left and a right rail.

Then glue the rails with the bigger parts under the crawler. At least glue the rollers to the crawler.

Next cut out the parts of the crawlerchain [15 parts each side]

Glue the crawlerchain and the chainguide together. The small rectangle is used to glue the crawlerchain to the small rollers.

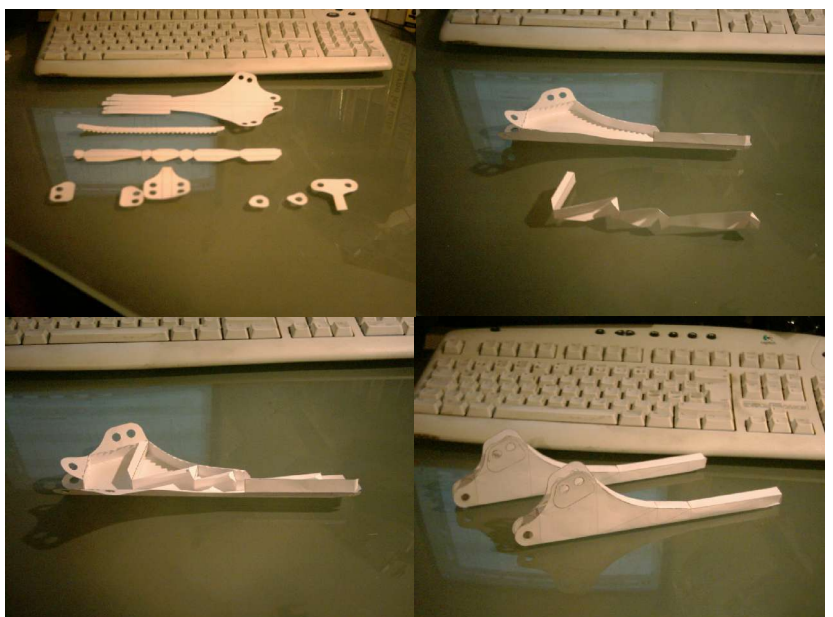
Glue the crawlerchain to the tracks and the chainguide at the underside of the tracks.



## Backbone

Cut out the parts [9 Parts each side]

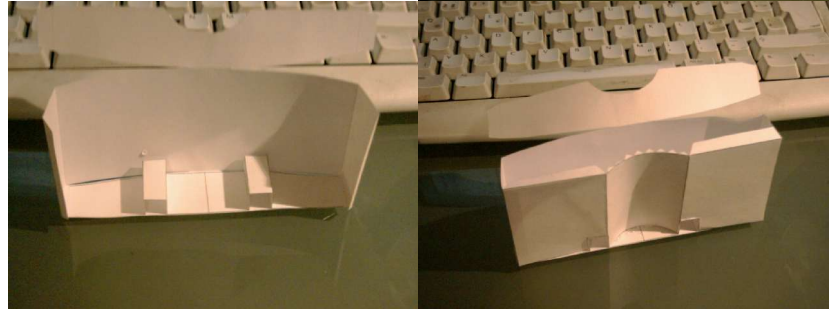
Glue the eyes so they will double up the eyes of the big part. The flap of the lower eye has to be loose and directing into the front. It covers later the frame-plate. If needed use the strengtheners to provide some strength to the eyes. (If you want to glue the excavator arm to the body, so you don't have to cut out the holes !)



## Counterweight

Cut out the parts [3 parts]

Glue the parts together, but let open. If the excavator is complete you can add weight here to maintain stability. Hey this is a real counterweight :-)

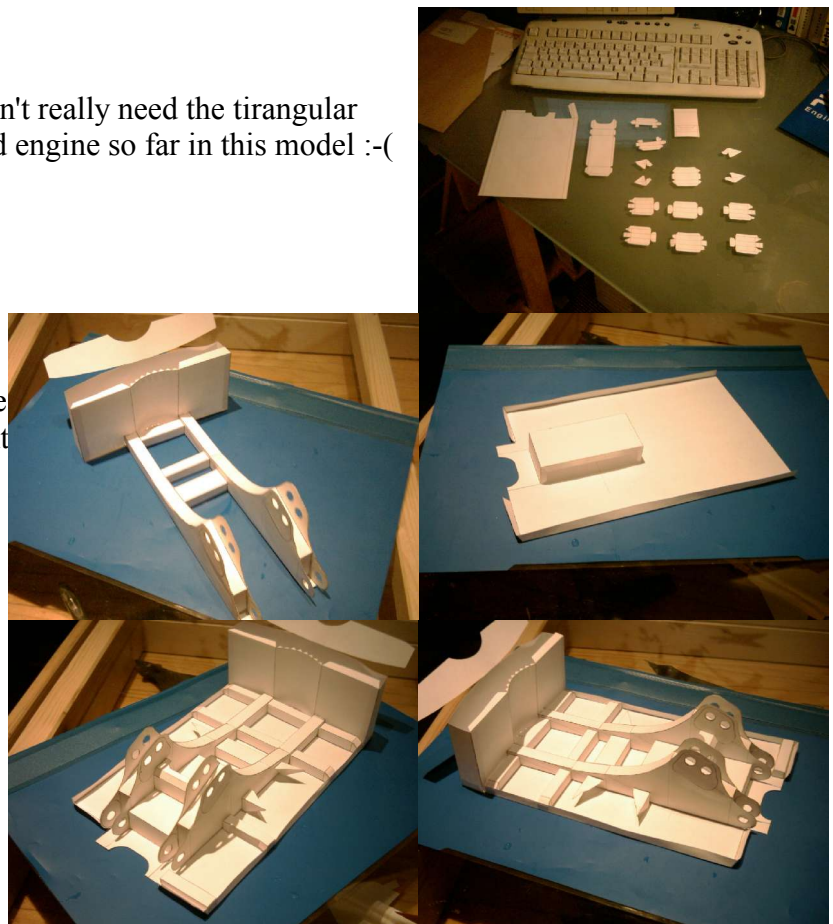


## Frame

Cut out the parts [16 parts] You don't really need the triangular shaped supporter, no aggregates and engine so far in this model :-)

Glue the 3 middle crossmember between the backbone. Stick or glue the backbone into the counterweight to maintain a proper fit. Glue the bottom of the frame and the large part as pictured here.

Then glue the backbone to the bottom of the frame, add the other crossmembers, and at last the last piece between the backbone.



## Silencer

Cut out the parts [3 parts]

Roll, fold, glue. Glue the silencer not to the supporter. You have to do that at last, with the almost finished model.



## Valveblock

Cut out [1 part] Fold and glue so that beside the marking is a gap on the upper surface. There you have to stick the hydraulic lines into.

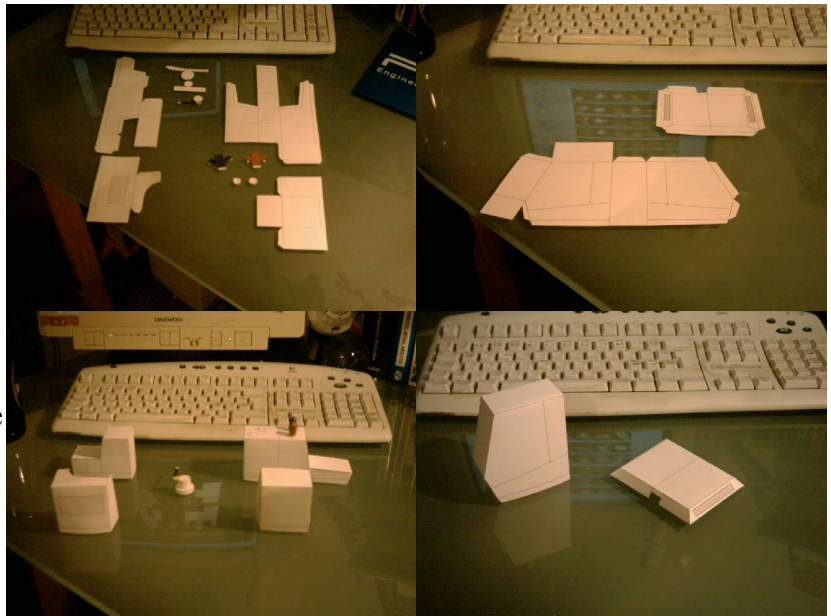


## Casings, Motor, Cabin, Hood

Cut out [13 parts]

Fold and glue.

You can glue the handrails, mirrors now, but i think its better to do this as the last. If you want to, so see the last steps of the instruction.

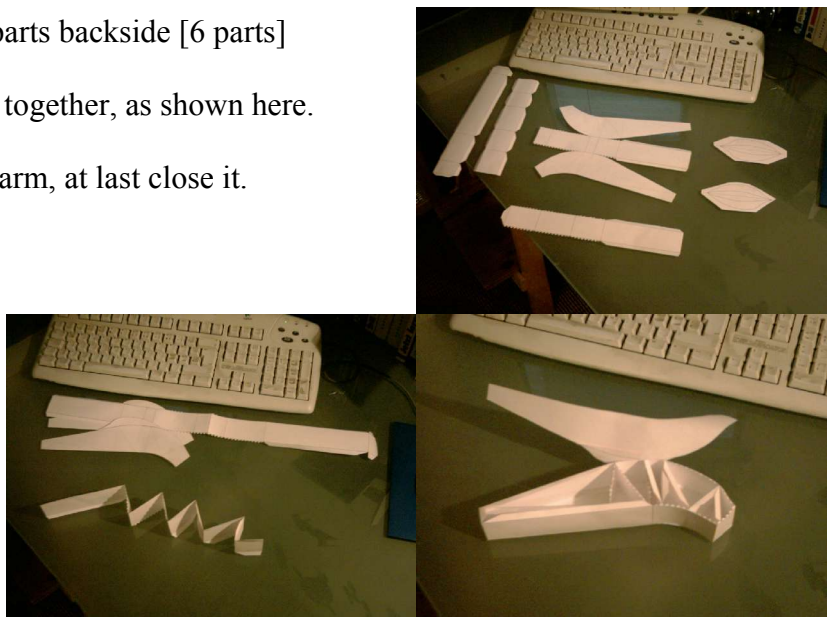


## Excavatorarm 1

Cut of the parts, glue the two right parts backside [6 parts]

Glue the shell and the internal parts together, as shown here.

Glue the internal supporter into the arm, at last close it.

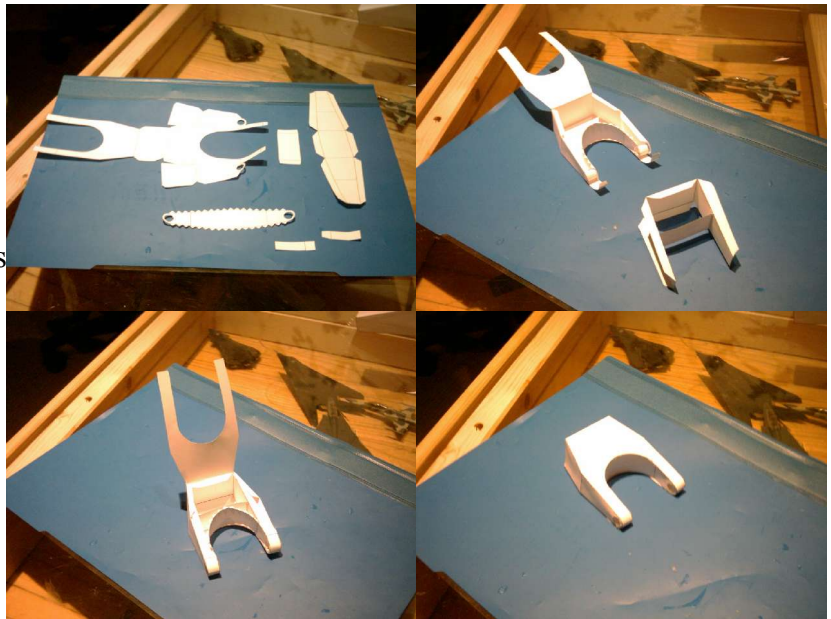


## Hinge 1

Cut out the parts [6 parts]

Roll and glue the small rectangles, they form the hole. ( Dia. 6.5mm )  
Glue the outside and the inside parts as shown.

Glue together, close and wrap around the strips.



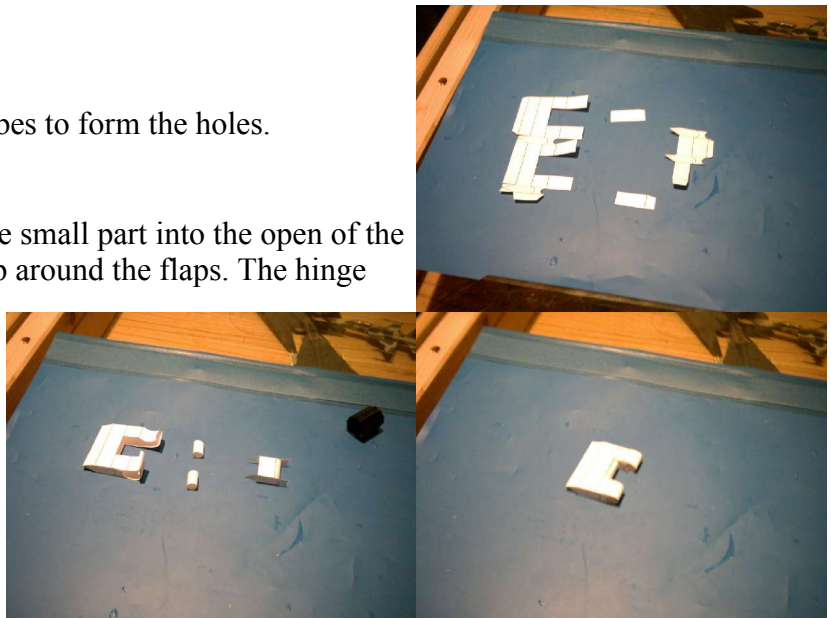
## Hinge 2 & 7

Cut out [4 parts each]

Again roll the small rectangles to tubes to form the holes.

Glue the two parts, and then glue the small part into the open of the bigger part. Glue the tubes and wrap around the flaps. The hinge should be closed now, except the holes.

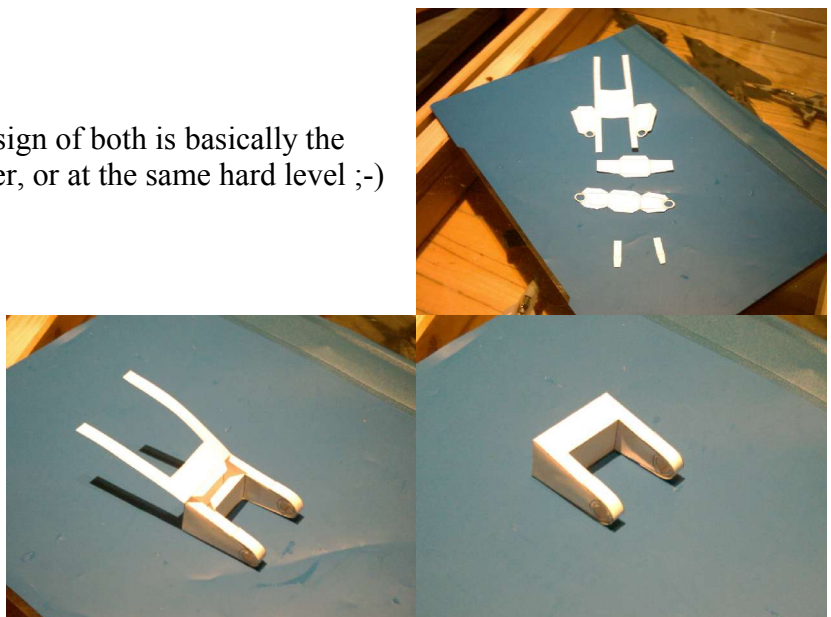
Build hinge 7. Its the same, only a little bit smaller.



## Hinge 3

Cut out the parts [5 parts]

Build it according to hinge1, the design of both is basically the same, to keep things a little bit easier, or at the same hard level ;-)



## Hinge 4

Cut out [2 Parts each side]

Glue together and glue the disc into it.



## Excavatorarm 2

Cut out the parts [4 parts]

The assembling is the same as for the first arm, except the a shift for the standing parts.

Glue together and let dry.



## Hinge 5

Cut out [6 parts]

first roll the rectangles to tubes. Again they form the holes. They larger rectangle forms also a hole with the same diameter inside the big part of this hinge. Then glue together.

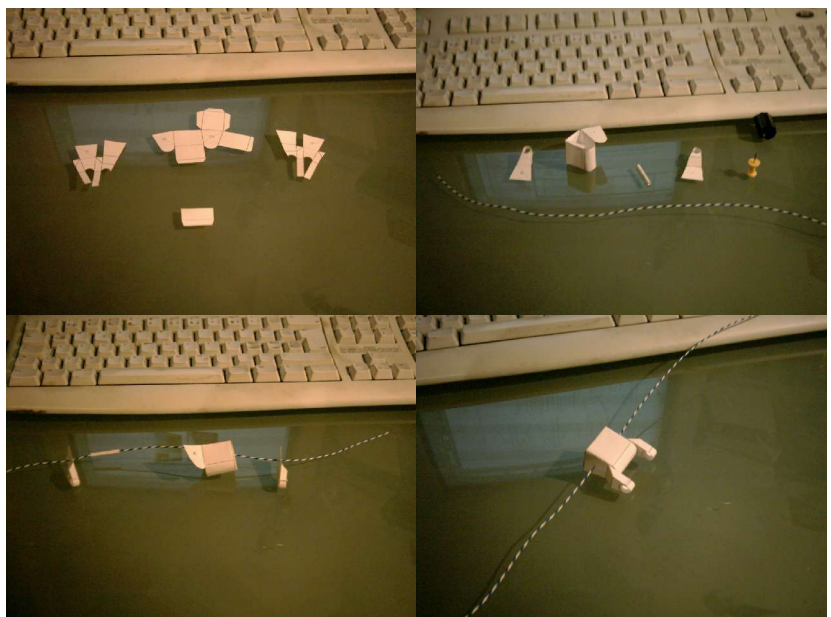


## Hinge 6

Cut out [4 parts]

Roll the rectangle to a small tube. Glue the other parts.

Then take a wire and string the parts as shown. The tube prevent this part from collapsing. Glue together all to hinge nr. 6

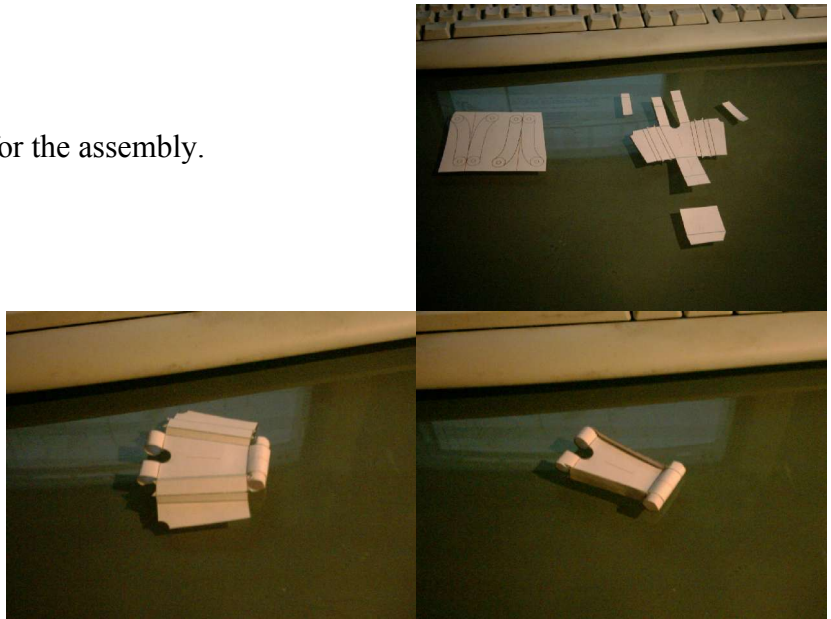


## Parts of the shovel

Cut out the parts [6 parts]

The left two parts are needed later for the assembly.

Again roll the rectangles to tubes. Fold and glue the other part, wrap the flaps around the tubes. It mainbody forms a double-T-shape.



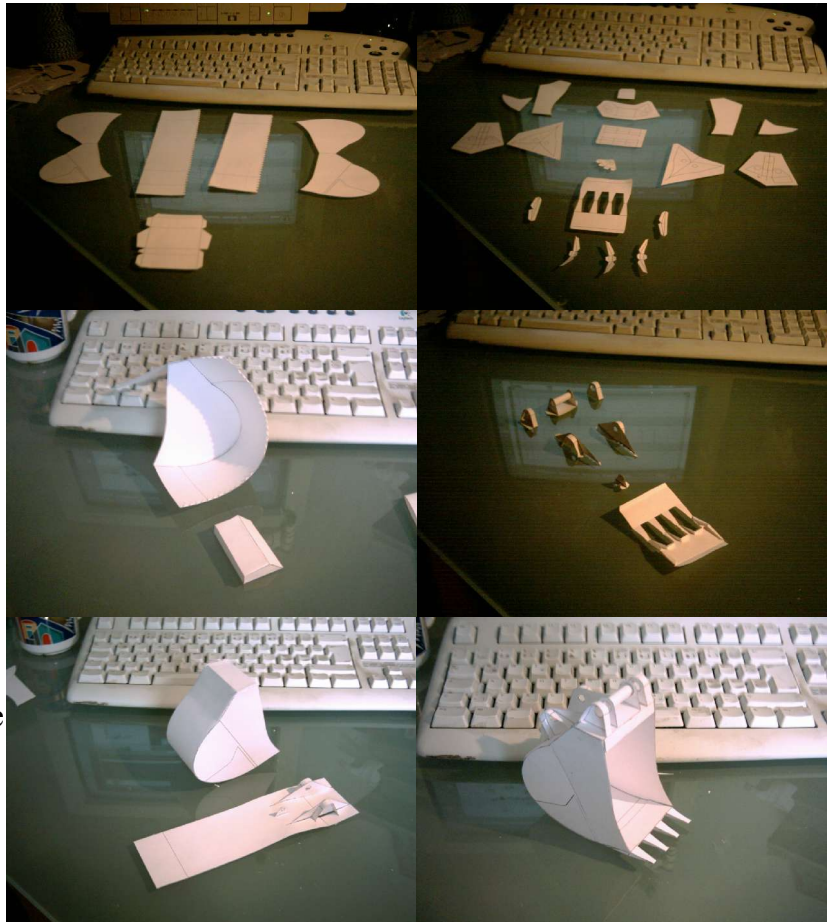
## Shovel

Cut out the parts [18 parts]

Glue the first the inner side of the sides of the shovel, add the beam at the top, then glue the outside of the shovel. There should no glueingflaps at sight.

Glue the small parts together as shown here.

Glue the small parts into the outside of the shovel, wrap around and add the sprockets and the reinforcements to the outside.





## Hydraulikcylinder

Cut out the parts [9 parts each]  
You need 4 cylinders.

Roll the small long rectangle to a tube (ca. Diameter 3mm). Roll and glue around one of the long strips. You can strengthen the rod, when you include some stick, like a thootpick or so.

Then roll around the second long strip. Glue the strip itself but not to the rod. It should fit tigth, so the cylinder later can support the arm. Push i up and down to prevent it from glueing to the rod.

Then take the big rectangle and roll around, glue this to the pushed piece, but not to the rod piece. But again roll and fit it tight.

Let it dry and glue meanwhile the eyes of the cylinder. Roll the small rectangles and roll around the bigger parts. The small eye should have a surface standing out at the bottom. Roll the last long strip and fit it into the bottom of the tube, let unroll and glue it to the tube. Again be aware to not glue the rod!

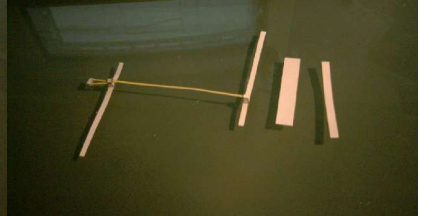
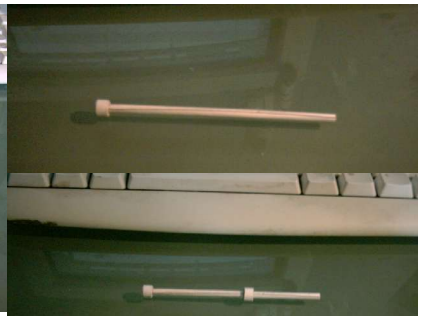
Cut into the small rod a little gap so that you can glue the standing surface of the smaller eye into to give a better forcedistribution. Also glue the downeye to the bottom of the cylinder.

Let dry and push it from time to time. If you aren't satisfied with the diameters, so you can glue some extra parts, but be aware they have to fit into the hinges.

Cut out the parts for the hydrauliclines, if you want to build them [9 parts each]

Fold and glue together. Fold and glue the small parts zig-zag. Glue the lines atop the boxes, and then the zig-zag-parts, they give a little extra hight for the pipesupport. (this will follow all other hydrauliclines, so this will not mentioned again.

First roll and glue the rectrangles to the top of the cylinder, first the bigger then the smaller, then wrap around the lines. Cut the strip if to long.



## Rotatingassembly 2

Cut out [8 parts]

Cut the inner lines of the two bigger bands. Fold, and glue to a ring. The cuts have to be on the outside, with a gap. This provides a little bit easier build and strenght of the rotatingassembly. Glue the small ring [middle of the pic.] atop the ring. Correct to the right length, but you must not fill the ring. Build this with respect to the rotatingassembly of the tracks/crawler; it has to fit.

Add the small stripes and the second ring (cut the lines similar to the first ring). Wrap around. Glue the other small stripes in place and glue all to the circle. (you can glue the other very small lines, but i proofed it is too small, so i didn't made it, but let the part in the model for some crazy guys ;-)

Glue it under the frame, add the cubes, made with the first rotatingassembly in a  $45^\circ$ , opposite sides according to the scissors. Then mount it to the tracks (you can glue it if you want)



## Assembling the excavator arm

Take the 16 parts of the arm.

I didn't make parts for the bolts, because I don't know which paper you will use. So you have to cut out and roll a piece of paper and fit it in the holes. Test it if it has the correct tightness. Sometimes you have to add some additional paper to fit. Be careful! I rolled the strips, applied some glue and let them a little unroll in the bores. It's a good idea to practice this before getting serious.

First make the bolts for the cylinders, let dry.

Take the arm 1 and glue the hinges 1 & 3 to it. Attach the cylinder 3 to the hinge 2 and glue it between the upper surfaces of the arm 1. The hydraulic lines at top.

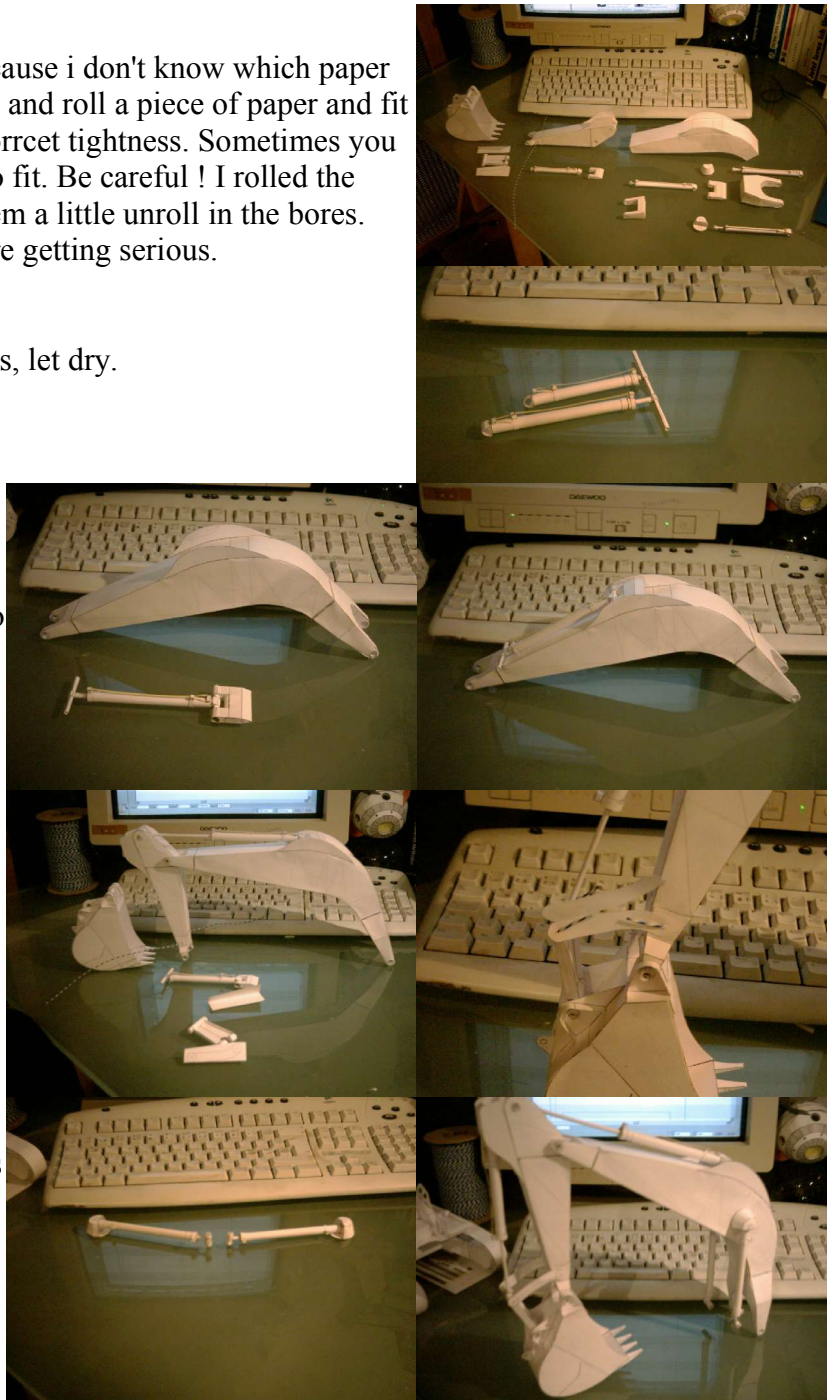
Add hinge 5 at the lower of arm 2 and hinge 6 to the top. The small parts of hinge 6 into the gap sides.

Attach cylinder 4 to hinge 7 and glue it between the top of arm 2. Again the lines at top.

Add the shovel and the parts of the shovel. Use some wire at the shovel, as shown here, and glue this part around the wire.

Glue cylinders 1 & 2 with the thicker end into the hinges 4. The lines have to direct to the frame.

Add this to the arm 1.



## Hydrauliclines

You don't need the lines, but if you are enjoyed the building so far.....

Glue backside, then cut out. [31 parts for all 3 sets] The keyword is carefully !!!

Glue the boxy parts to boxes and glue the lines atop. The smaller 3-rectanglar parts give some extra thickest atop for the line-supporters, same as for the cylinders. Add them when you finished all the lines

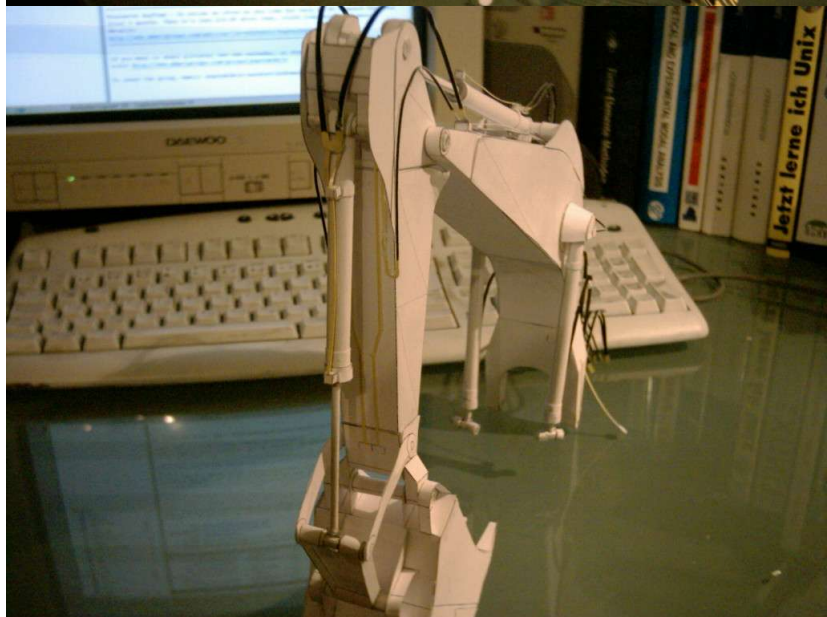
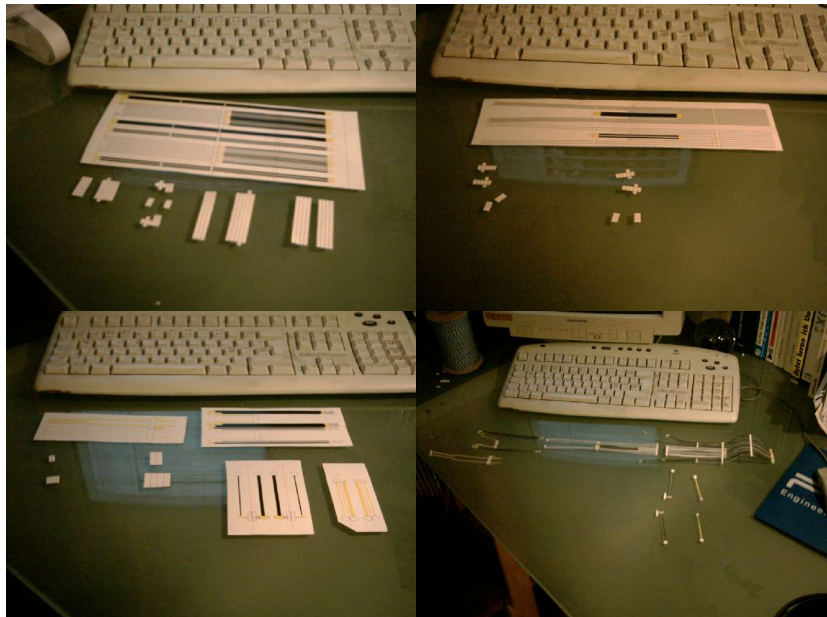
Glue the lines step for step.

Add the first set to the arm 2, and his cylinders. Add also the 4 smaller lines.

Add set 2 to connect the arms 1 and 2.

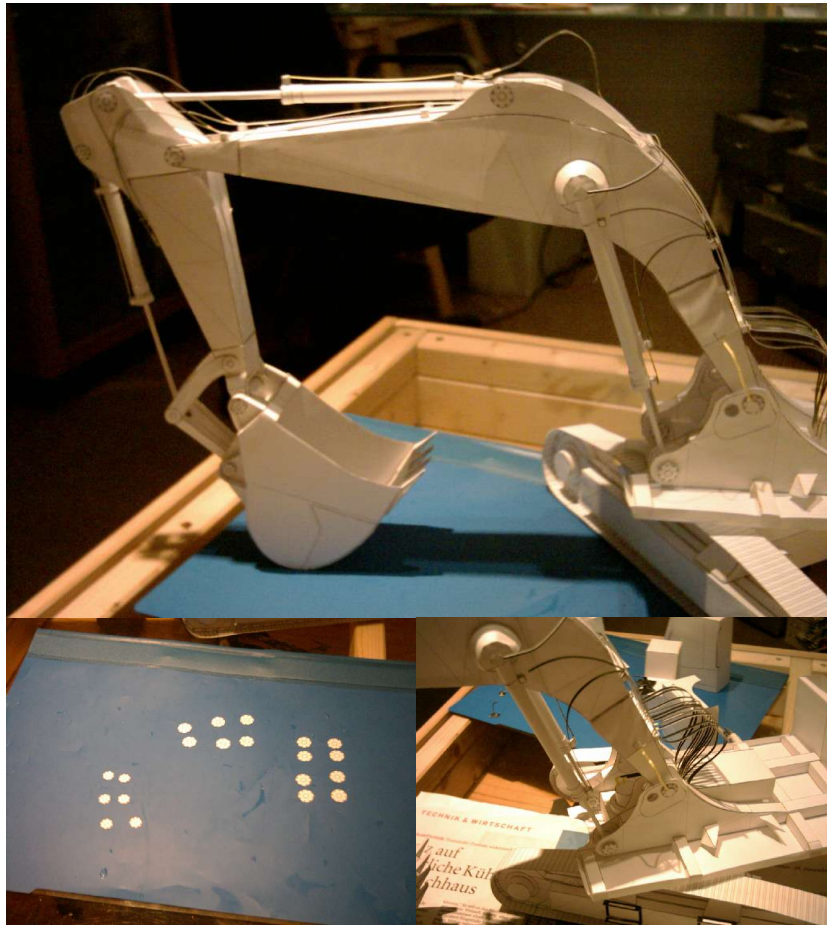
Add set 3 to arm 3. Its top reaches under hinge 7.

At least place the zig-zag parts at the top of the boxyparts.



Add the arm to the frame using the same bolt-rolling technic :-)

You can use one of the two holes at the top. (According to the prospect, the upper is for short reach and the lower for a longer reach of the arm)



At least cut out and place the caps for the bolts to prevent them from slipping out. [20 parts] sortet at the pic :-)

See also pic above.

## Casings, Hood, Kabin, Valveblock, Silencer, Handrails & Mirrors

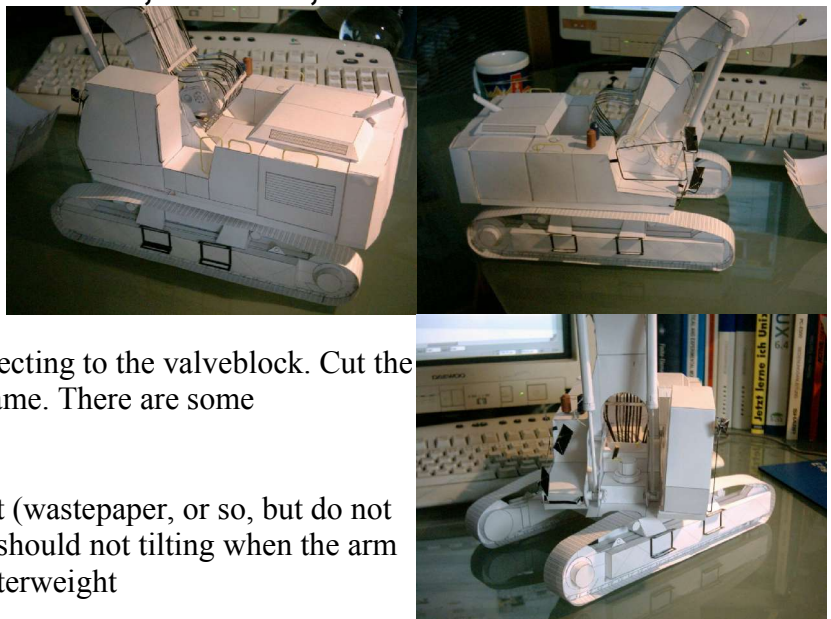
First add the valveblock between the backbones near the ends of the hydrauliclines. Then add the silencer at the aft, use his supporter to glue (wrap around the strips)

Then add the casings, the cabine and the hood. Also add the engine between the backbones, its lines directing to the valveblock. Cut the bottom of the parts to fit into the frame. There are some crossbars :-)

Insert weight into the counterweight (wastepaper, or so, but do not insert hot materials) The excavator should not tilting when the arm is at full reach. Then close the counterweight

At last add the handrails and mirrors to the excavator.

By the way there are 2 lights lingering around the hydrauliclines. You can also glue them and apply them to the arm 1. ( the black dot, in the pic right, top ;-)



I hope you had as much fun building, as i had to construct.

