Ghoul in the Graveyard
Automaton

If you prefer not to read the instructions…

I don't like reading instructions. I put together a step-by-step 15 minute video on how to assemble the Ghoul in the Graveyard automaton kit.

Use the QR code below to go straight to the post on my website where you will find the latest version of these instructions, a video tutorial and helpful tips and tricks on how to troubleshoot any common problems.
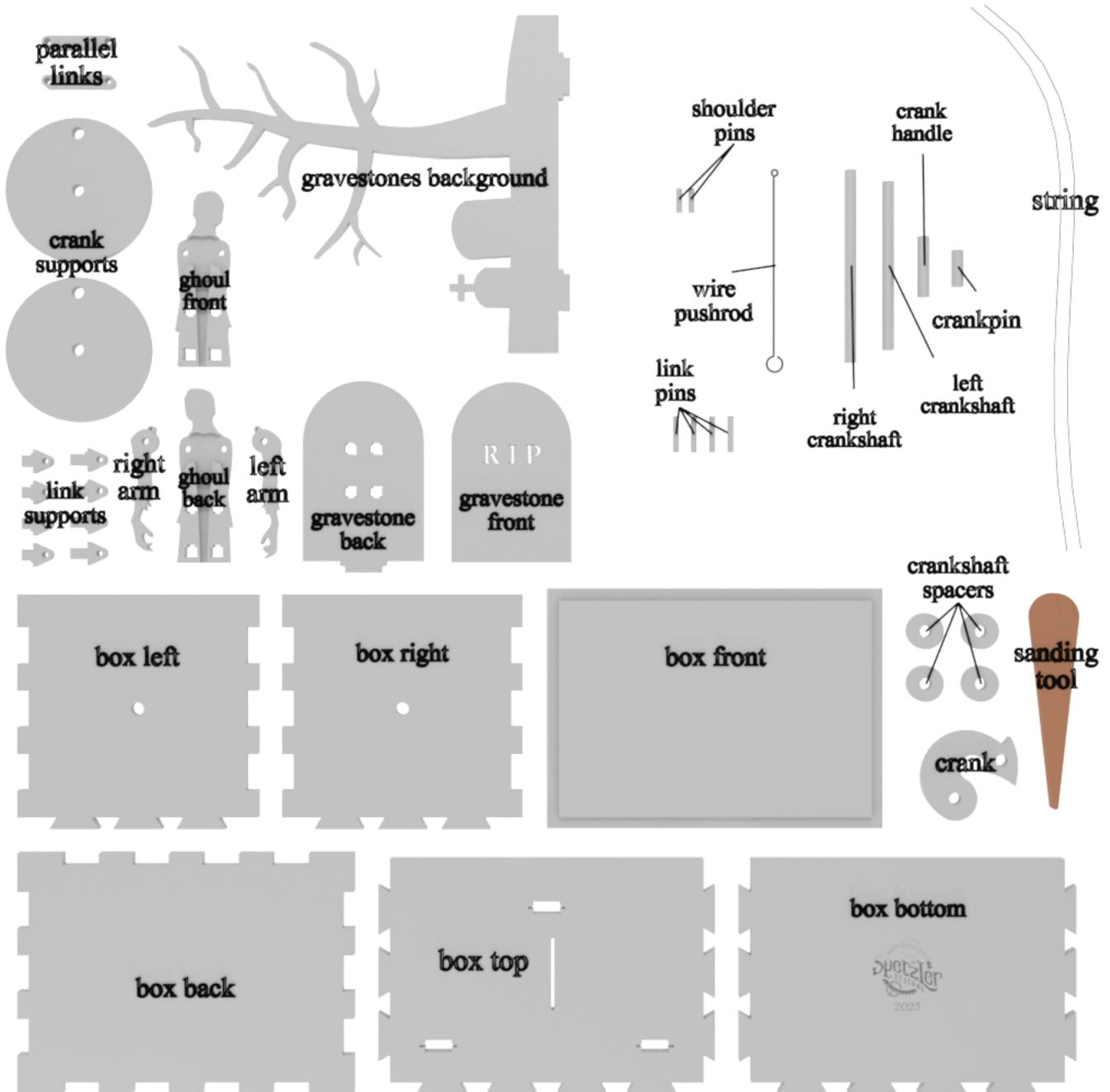
You can also see how other automata kit builders have finished (and added other surprises) to their kits to get your creative juices flowing.

https://spetzlerdesigns.com/ghoul-in-the-graveyard-automaton

Parts Layout

(I recommend you tear this page out so you can identify the parts as you read the instructions)

parallel links

crank supports

ghoul front

gravestones background

right link arm supports

ghoul back

left arm

gravestone back

gravestone front

shoulder pins

crank handle

string

wire pushrod

crankpin

link pins

right crankshaft

left crankshaft

box left

box right

box front

crankshaft spacers

sanding tool

crank

box back

box top

box bottom

Parts List

- ☐ Box assembly
    - ☐ 2x Side pieces
    - ☐ Back piece
    - ☐ Front piece
    - ☐ Bottom piece
    - ☐ Top piece
- ☐ Crank assembly
    - ☐ 4 inch crankshaft (¼ inch dowel)
    - ☐ 3.5 inch crankshaft (¼ inch dowel)
    - ☐ Crank (arrow shaped)
    - ☐ 4x crankshaft spacers (¾ inch diameter ring)
    - ☐ 1¼ inch crank handle (¼ inch dowel)
    - ☐ 2x crank supports
    - ☐ ¾ inch crankpin
- ☐ Parallel linkage
    - ☐ 2x parallel links
    - ☐ 4x short link supports
    - ☐ 4x long link supports
    - ☐ 4x link pins
- ☐ Ghoul
    - ☐ Ghoul front
    - ☐ Ghoul back
    - ☐ Right arm
    - ☐ Left arm
    - ☐ 2x shoulder pins
    - ☐ 2x string
- ☐ 4 inch wire pushrod
- ☐ Gravestones background
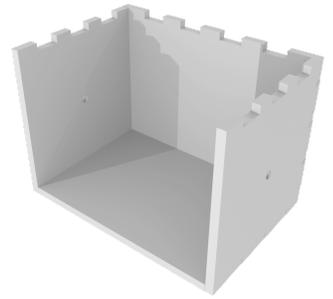- ☐ Gravestone front
- ☐ Gravestone back

Also included in kit

- ☐ Sanding stick
- ☐ Glue
- ☐ These Instructions

Assembly Instructions

Box (sides & back, then bottom)

- ☐ Attach the side panels of the box to the panel labeled "back"
  Note: it is important that the labels are on the outside of the box and the flat sides of the box pieces are all on the same side of the box (the front). The left and right pieces are interchangeable, but the labels should be on the outside of the box
- ☐ Attach the bottom piece
- ☐ Set aside the top and front piece to be attached later

Tombstone assembly

- ☐ Insert the 4 short link supports into the back gravestone piece as shown in the image. You should not need glue for the link supports as they are a fairly tight fit.
- ☐ After the link supports are in place, glue the gravestone front & back pieces together and set aside to dry.

Crankshaft assembly

Crank Support

- ☐ Glue the crank pin into one of the crank supports. The crank pin should be inserted far enough so it's flush with the side.
- ☐ Put the larger ring of the wire pushrod on the crankpin
- ☐ Glue the 2nd crank support onto the crankpin that has the wire on it.

Crank (right side)

- ☐ Glue one of the crankshaft spacers and the arrow shaped crank on the right crankshaft (the longer 4 inch crankshaft). The crankshaft goes in the center hole of the crank (the hole at the base of the arrow).
  Note: Make sure that the crank points in a clockwise direction (looking from the handle side). The crankshaft spacer goes between the box and the crank to keep the crank from rubbing on the box.
- ☐ Glue the crank handle into the hole located in the crank arrow head.
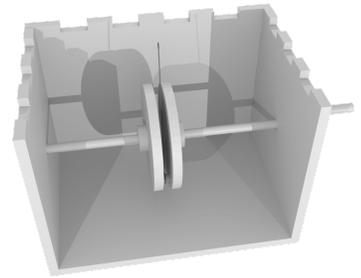
Crank (left side)

- ☐ Glue a crankshaft spacer on the end of the left crankshaft (the shorter 3.5 inch crankshaft)

- ☐ The right and left crank assemblies go through right and left sides of the box. After you slide both assemblies into the box, put a crank spacer on both. Don't glue them in place yet.
- ☐ Glue the crank support assembly between the right and left crank sections. The crank support assembly is going to be held in place by both crankshafts. The crank spacers are there to provide additional support, so they also get glued to the sides of the crank supports
- ☐ Once you have the entire crank assembled, you can put the top of the box in place.
  Note: Make sure that you route the wire pushrod through the long thin slot in the top as it's very difficult to put it through once the top is secured.
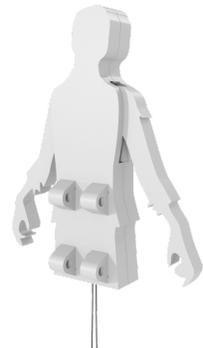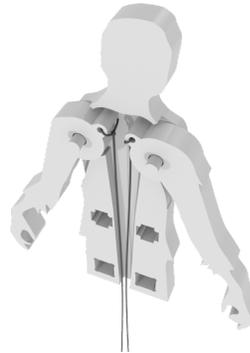
Ghoul assembly

- ☐ Put the shoulder pins in the ghoul back piece (the piece that has holes all the way through). Don't glue the pins because they will end up sticking out of the back of the ghoul when the ghoul top piece is put in place.
- ☐ Tie a string to each of the arms in the small hole.
  Note: I've found that it's best to tie a loop and not just put a knot in the end of the string as the knot will end up rubbing against the ghoul and prevent the arms from dropping
- ☐ Put the arms on the shoulder pins and route the string down the channel carved in the body

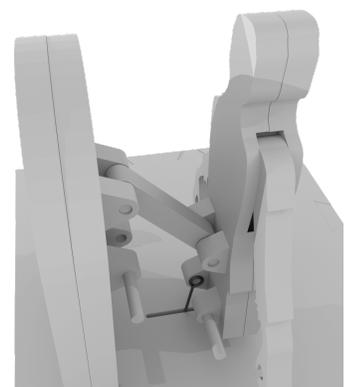## Parallel Linkage Assembly

- ☐ You can attach the gravestone to the ghoul with the linkages and the link pins. The link pins are a snug fit and don't need any glue.
  Note: I've found it easiest to leave the bottom link only attached to the gravestone and not the ghoul until the gravestone is attached to the box so you can line up the wire pushrod easier.
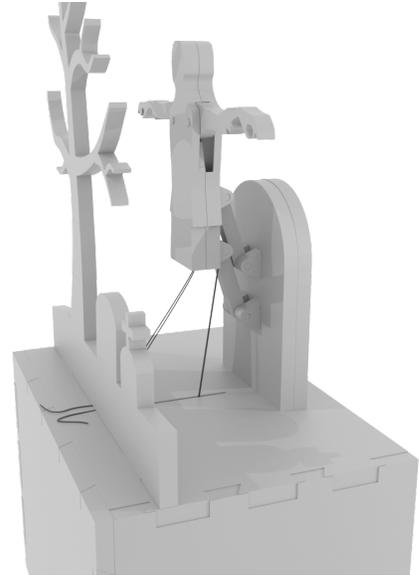- ☐ Attach the gravestone assembly to the top of the box with "RIP" facing forward and the link supports facing the back.
- ☐ The wire pushrod goes on the bottom pushrod pin (on the ghoul side). Make sure that the wire pushrod is on the left side of the bottom parallel linkage as you insert the pin that holds both the linkage AND the wire pushrod.
  Note: It can be a bit tricky to get everything lined up. I've found it helpful to round the end of the link pin so it can find the center of the linkage and wire pushrod ring. You can use the back side of the sanding tool to help push the pins through so they don't hurt your fingers.

Final assembly

☐ The arms of the ghoul go up when the strings that go out the bottom of the ghoul are pulled gently. You can tuck these strings under the gravestones background before you push it down and lock it in place. Lightly pin the strings behind the gravestone background with your fingers. As you operate the crank and the ghoul gets to the top of the gravestone, the arms will go up and pull on the strings. Let the strings slip so that the ghoul can get to the highest point with the arms raised. Once you've reached that point, you can push the graveyard background all the way into the slots and pin the strings in place.

☐ Crank the handle around several times to make sure that both arms raise the amount you want them to and once you are satisfied, you can tie a little knot with both strings that will keep them from pulling back out from under the graveyard background.

Decorating

I painted mine with acrylic paint to finish it off.
You can do whatever you want to make your automaton unique! Don't forget that you can also decorate the inside of the box.

You're Finished!

I really hope you enjoyed assembling Ghoul in the Graveyard. Take some time to pat yourself on the back and then show it off to everyone!

If you have any trouble getting your automaton to work, I'm happy to help troubleshoot. First try checking the website for troubleshooting tips & tricks to try to solve your problem right away (you can use the QR code on the 2nd page of these instructions to get you directly to the right page or go to https://spetzlerdesigns.com/gone-batty-automaton). If you need to get some help from me directly, email gary@spetzlerdesigns.com and we'll figure out what to do to get your ghoul jumping and waving. Also, if you've lost or broken a part or just glued something in the wrong place and need a replacement, I have spare parts or can make them for you if necessary.

I have quite a few other kits of varying levels of difficulty. If you enjoyed making this one, I would suggest trying my other Halloween themed automatons.

There are more kits, tips, tricks, samples and ideas for modifying your new automaton to add more surprises to your automaton on my website SpetzlerDesigns.com.

-Gary