

Tools for Adapting Toys

Recommendations from Shannon Kuester



1/8" Stereo In-Line Audio Jack

\$3.99

Model: Stereo Inline
Catalog #: 274-274

plug part



2-Conductor Intercom Wire

\$4.99

Model: 278-857
Catalog #: 278-857

wire to make plugs



High-Tech Rosin-Core Solder (1.5 Oz.)

\$3.29

Model: 64-015
Catalog #: 64-015

soldering wire, this is the one I use,



Soldering Iron Holder and Cleaner

\$7.99

Model: 64-2078
Catalog #: 64-2078

gun holder



Cool-Grip 30-Watt Soldering Gun

\$6.99

Model: 64-2066
Catalog #: 64-2066

dont buy a cool touch one



Kronus™ 6" All-Purpose Pliers

\$7.99

Model: 64-2957
Catalog #: 64-2957

pliers- not always needed, but useful to have on come toy and for the plugs. I didnt buy any, I stole them out of the tool box out in our garage



Kronus™ 4.5" Mini Diagonal Cutters

\$5.99

Model: 64-2951
Catalog #: 64-2951

these look similar to what I have, mine are actually from Michaels and are meant for jewlery making/ wire cutting



Kronus™ Gauged Wire Stripper/Cutter

\$8.99

Model: 64-2980
Catalog #: 64-2980

wire strippers, cutter part on these is not very good, but the best stripper part I have found

Other – seam ripper with blade, HOT glue gun (high heat), glue sticks

Before you buy anything, you may have some of those tools laying around the house somewhere. We did! Then if you find you are using them enough, you can purchase your own set.

Adapting Toy Article

As the mother of a type 1 child, I was immediately concerned with how I could make her life as “normal” as possible. How could I give her the experiences that my older daughter had? How would she play with toys? Most of what I found online in reference to SMA and type 1 children recommended light weight objects such as feathers and balloons. So I ran out to the local dollar store and began my hunt for light weight objects. I was disappointed in what I found. Was this really all there was for my daughter? Then my daughter was generously given an

adaptive switch and one switch adapted toy. She loved it! At 5 months of age she knew exactly what that tiny sensitive button in her hand did. But one toy wasn't enough. She needed more. She needed to experience new things, make choices, learn cause and effect... So I once again began my search for things my daughter could play with. After many dead ends I ended up on E-bay. I purchased 2 switch adapted toys for an outrageous amount of money. I couldn't help but think there had to be a better way, a cheaper way. The toys I purchased were simple, they were just like other toys I already had in my house, a singing and dancing Blue from Blue's Clues and a cheap pretend radio that played music when you pressed its button. Curious, I took the toys apart. I found that the simple plug that was hanging out of the adapted toy for me to plug my daughters switch into was simply connected to 2 wires inside the toy. I was inspired and motivated. I ran to Radio Shack and I purchased a Soldering Iron, some Soldering wire, wire cutters, wire strippers, a spool of wire, and a package of 2 In-Line 1/8" Phone Jacks. I practiced on a couple of old toys that my kids were not as interested in and in no time I had figured out how to adapt a toy on my own. I tell you all this because I think it is important for you to know that I have no background in adapting toys, electronics, etc. I am simply a mom. So if I can adapt a toy, so can you.

Before you begin adapting toys you need to locate a switch that your child can use. Based on ability and movement each child will need a different switch to meet their needs and have success. There are many different switches available with a wide variety of different ways to operate them. My daughter started out using a Tash Microlight switch. As she lost some of her movement though, it became too difficult for her to squeeze or press it. She now uses an IST Switch by Words Plus (Infrared, Sound, Touch), she uses the infrared feature and simply has to move her finger to interrupt the infrared beam. Depending on where you live and what services your child receives, there are different people that can help you acquire these switches. Sometimes they will buy the switch for your child or submit it through your insurance. Other times they can get you one as a trial only and then you would have to purchase it on your own if you were interested in keeping it long term. Some of the companies that sell the switches are even willing to work with your insurance or accept flexible spending accounts. Talk to your child's Occupational Therapist, Physical Therapist, Early Childhood Educator, or services coordinator, they should be able to point you in the right direction of who to contact. Our Birth to 3 program has access to a lending closet, but the waiting list to try out the IST switch was too long. So I contacted the company that makes the switch and they were happy to send it to me for free for a one month trial. At the end of the month trial I could either send it back or purchase it, we purchased it. So if you do find that your service coordinators can not help you, don't be afraid to look online and make some phone calls yourself. We had a very positive experience doing it this way.

It is much cheaper to permanently adapt a toy yourself then to purchase one already done. A lot companies that sell adapted toys raise the price to cover their labor. (Don't throw that over priced catalog away though, it's a great place to get ideas from and decide what toys you want to adapt yourself!) I have found that most toys are really not that hard to adapt once you get inside them. Depending on the toy, you can use a screw driver, a seam ripper, or scissors to get inside. Once inside You will need to locate the wires leading to the button that turns the toy on and off. These are the wires you will cut, strip, twist back together and twist the wires to your 1/8" plug to as well. You will then have to solder them together so they don't come untwisted. Don't be afraid of the Soldering Iron, it's like a hot glue gun with metal instead of glue. I also like to coat the soldered wires in a little hot glue so that they don't accidently touch and make the toy dance

or sing when no one is using it. Then you screw the toy back together (some toys will need to be sewn or hot glued) and you have an adapted toy! I usually assemble the 1/8" plug before I start working on the toy, I typically will put a few together and keep them on hand so that when I want to adapt a toy I have the plugs ready in advance. Don't be afraid to give it a try. I did ruin and break a couple of toys in my learning process, so I wouldn't recommend starting with your child's favorite toy. I purchased a couple toys from a local second hand shop and practiced on them.

Some toys can be adapted by using another device. A battery interrupter can simply be placed in the battery compartment of a toy. This is a little metal plate that slides between the battery and the spring. It has wires hanging off it and a plug on the end of them that you can plug a switch into. They come in a couple of different sizes and you purchase the size based on the battery size the toy requires, like AAA or D. These are relatively cheap and can be purchased from a variety of vendors online. There are also devices that can allow your child to use a computer. There are a variety of Switch Interfaces available that allow you to do all the functions of a computer mouse with an adaptive switch. A Powerlink box allows you to plug a wall outlet plug, like on a lamp, into the box and also plug your adaptive switch into the box making the lamp work with the switch. A Switch Latch timer will allow you to plug a toy in that normally will only stay on while your switch is being pressed/ activated and set a time so that the toy stays on until the switch is activated or pressed again. This works well for things like a bubble blower and makes it so your child does not get tired holding down the button for a long time. Most of these devices can be pricy. Many times you can get them on loan through local programs or organizations, lending closets, and sometimes on loan from the company that makes them on a trial basis before you decide to spend the money.

Adapting toys your self can be inexpensive and easy. It opens a whole new world of experiences, learning and fun to children with SMA. Come see me at the Families of SMA conference in Boston this spring for a step by step class on adapting toys. If you have questions, please feel free to contact me at info@addysadaptations.com.

How to assemble a 1/8" plug for toy adaptations

Supplies Needed: 1/8" Solder- Type, Stereo, In Line Phone Jack; Soldering Iron; Soldering Wire; Intercom Wire; Hot Glue Gun; Hot Glue; Pliers; Scissors; wire cutters; an adaptive switch (I am using the Tash Microlight), and a multitester (if you want to test the plug before using it).



- 1) On the 1/8" jack, unscrew the black casing from the silver plug part.

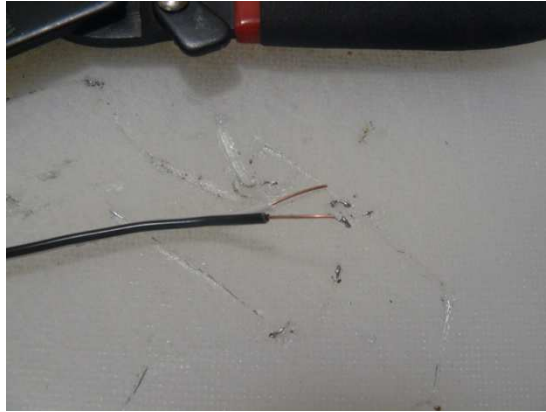


- 2) Cut a piece of the wire, about 9 inches long. Using the scissors, split the wire (black and white) about an inch up on each end.



- 3) Using the wire stripper, strip the plastic coating off both the black and white wires on each end exposing the actual wire.





- 4) Look closely at the silver inside portion of the plug, there are 3 holes. 2 upper holes that are a copper/ brassy color and the hole in the silver lower portion. Now insert one end of the black wire into the left copper hole. Then insert the same end of the white wire into the silver/ lower hole.



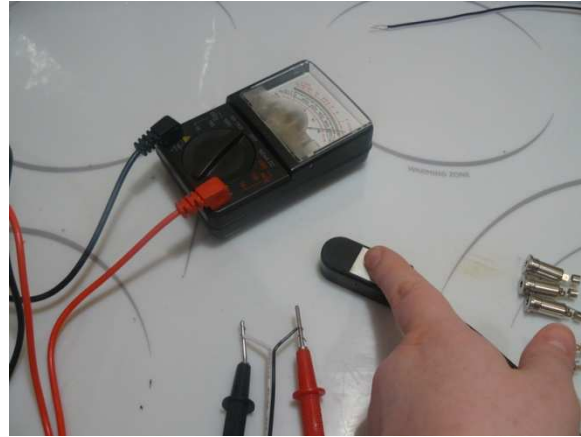
- 5) Now using the pliers, pinch the black wire down so that it is touching the copper connector. Solder it in place. Repeat with the white wire on the lower hole.



*To solder, plug your soldering iron in and let it heat up. Touch the tip of the iron to the wire, place that you want to solder. Touch the soldering wire to the tip and wire area as well. The

Soldering wire will begin to melt/ liquefy. When you have enough on there to hold it in place, remove the soldering wire and iron. If you need to make adjustments, put the hot tip of the iron back on the solder and it will re-liquefy.

*you may wish to test your plug now before continuing. To do this, plug your adaptive switch into the silver plug, twist the end of the black wire to the red probe coming off the multimeter. Twist the white wire around the black probe coming off the multimeter. Press the button/ activate your switch and the needle on the multimeter should move to the right, if it does, great, your plug works. If it doesn't, you will need to continue working, your wire (black) is probably not in contact with the copper connector and will have to be re-soldered.



6) Snip off the extra wire hanging out past the solder



7) Coat the soldered parts in hot glue to protect them.



8) Put the black case back on the silver plug and screw it back on.



Now your plug is ready to use to adapt a toy.

Adapting Doodle Doug

Supplies needed: Soldering Iron, Soldering wire, Hot Glue Gun, Hot Glue sticks for the gun, Wire cutters, Wire strippers, A 1/8" plug (already assembled), Phillips head screw driver

Directions:

- 1) Pop Doodle Doug's head off. Remove Doodle Doug's 6 rubber feet/ shoes. Using the screw driver, remove the screws inside each of his 6 legs. Remove the 3 screws on the underside of his body. Holding Doodle Doug carefully with one hand gripping his blue shell/ back, and one hand holding his green underside, pull him apart. Unscrew the screw holding the blue battery compartment cover in place and remove the cover.
- 2) Locate the blue and white wires leading to the on/ off button.



Snip these wires with the wire cutters. Using the wire strippers, carefully strip the waxy coating off the 4 snipped ends exposing the actual wire. Twist the 2 blue ends together and the 2 white ends together (reconnecting the wires).



- 3) Using the hot Soldering Iron tip, melt a hole in Doodle Doug near the battery compartment going up behind Doodle Doug's head.



Hole- Inside Doodle Doug

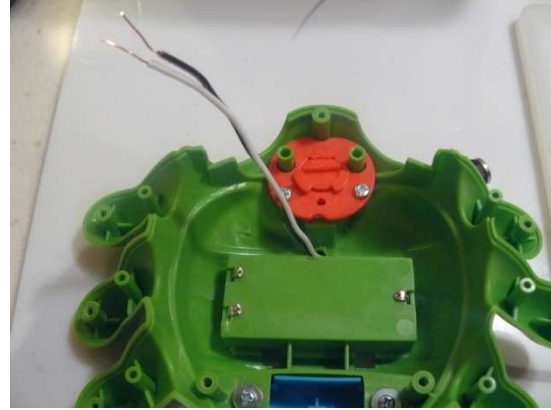


Hole- Outside Doodle Doug

- 4) Insert assembled plug into the hole so the plug portion is coming out the top of Doodle Doug near his head and the wires are on the inside of Doodle Doug.

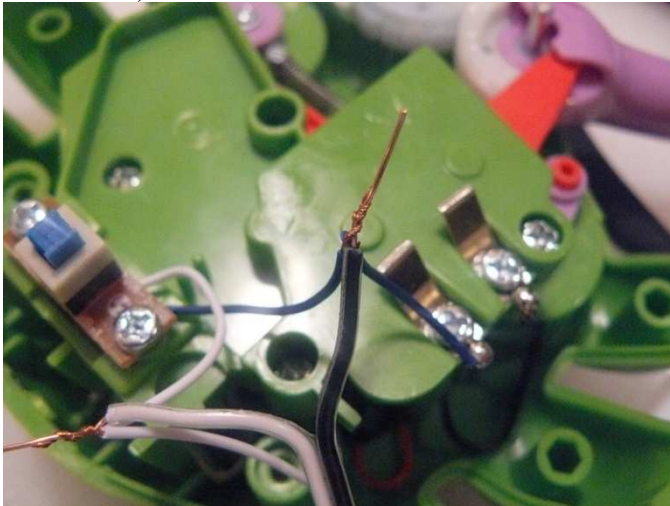


Plug- Outside Doodle Doug

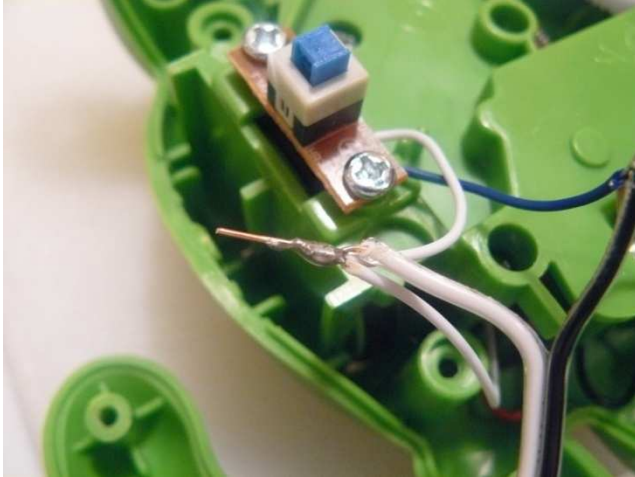


Plug- Inside Doodle Doug

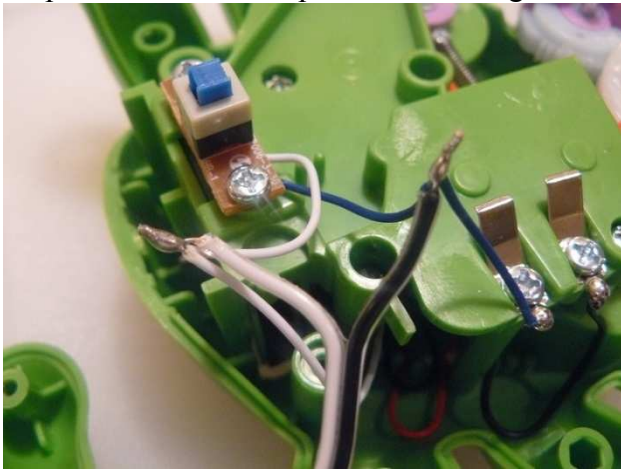
5) Twist one of the wires coming from the plug together with the white wires (I used the white wire). Twist the other wire coming from the plug with the blue wires (I used a black wire).



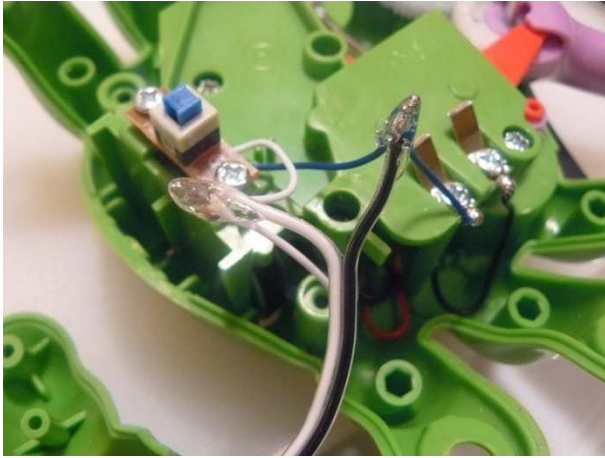
Solder the 3 white wires together, then solder the blue and black wires together.



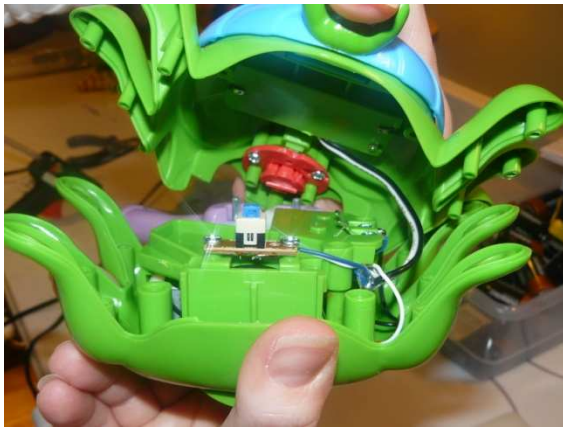
Snip off the extra wire past the soldering.



Coat the exposed wire and solder in hot glue to insulate them and keep them from accidentally touching. Allow hot glue to dry.



6) Carefully push the wires for the plug off to the side and place Doodle Doug's top back on.



7) Reassemble Doodle Doug by putting all 6 of his purple legs back on and screwing them back in place. Replace the 3 screws on the green underside of his body. Put the blue battery compartment cover back on. Replace his head. Put his 6 rubber shoes back on.



Congratulations!!! You now have a switch adapted Doodle Doug 😊