

# MEMORY WIRE

**MEMORY WIRE** - There really couldn't be a better name for it. When a small electric current is passed through it, it shortens by about 3 - 5% of its length, then returns to its original size when the current is turned off. And that's about as technical as this file gets.

So what use is it? Well the movement created by this stretch/shrink cycle can be harnessed to actuate signals, turnouts and small animations on your layout. For such a fine wire, (thinner than even my thin hair!) it can pull quite a bit of weight. I don't intend to give too many examples of what it can do - better to give you a diagram and let your imagination provide the ideas. Mind you, if you come up with a good one please let me know and I'll pass it along.

I thoroughly recommend starting with a Memory Wire "Kit". I got mine from C & L Finescale and it contained all the bits needed to get started. This included:

1 metre Memory Wire

Catheter tubing to slow down wire cooling and therefore slow wire expansion. (optional)

Clamps and loops for the wire ends. (It cannot be soldered, tied, or anything!)

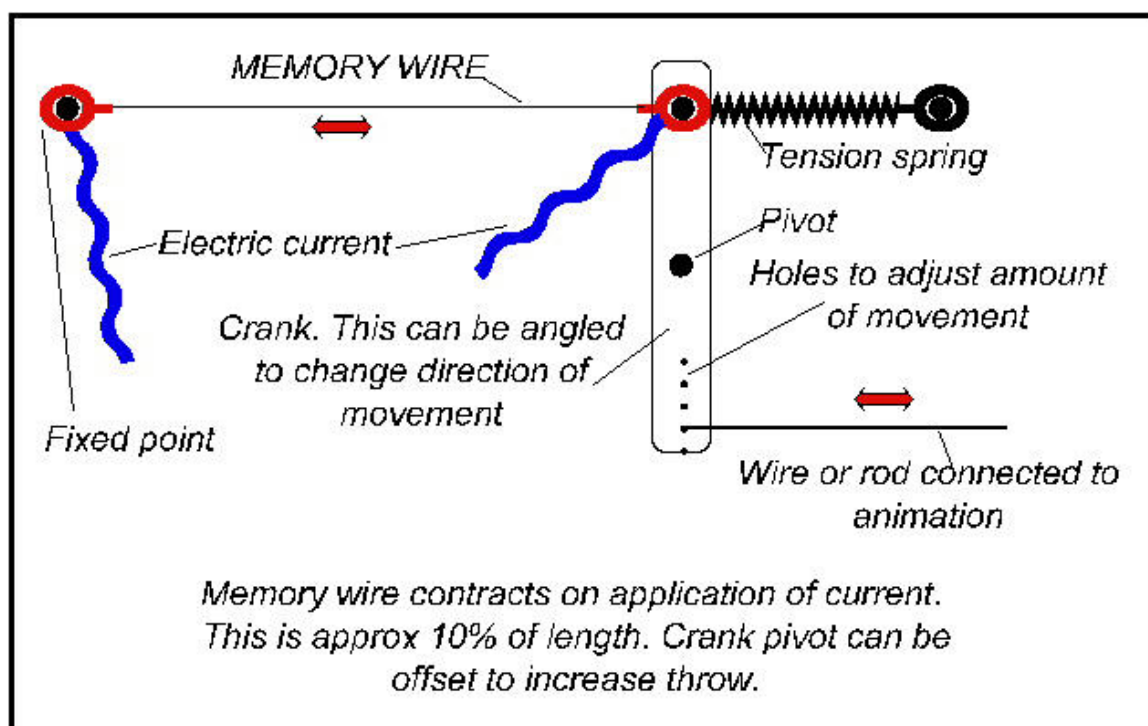
An assortment of springs to maintain tension

A small selection of angle cranks

The electrical bits to give correct current flow step-down from 12 volt DC

Pages of instructions, ideas etc.

It's a good way to start and after, all the bits are available separately.

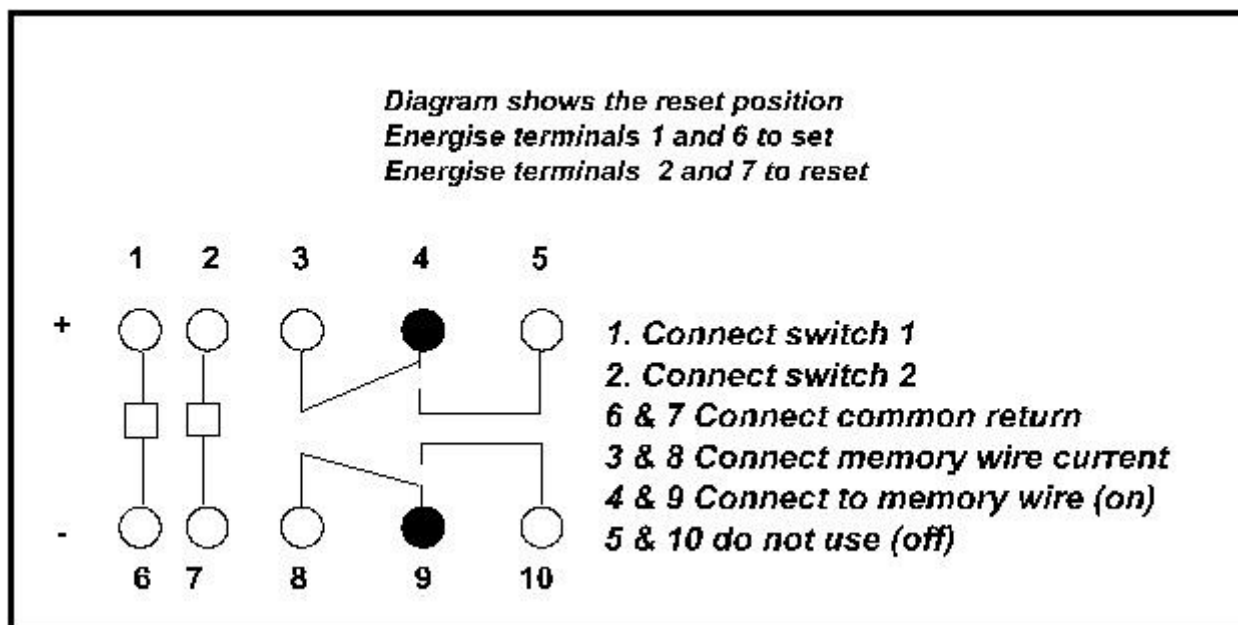


Obviously you need to calculate the length of wire needed to achieve the movement required. However, the length of the crank can be adjusted to give quite a finite movement. The shape of the crank and its angle/position determines whether the movement is lateral or vertical.

## Controlling the movement

Now how about switching the current on and off to control your animation? A simple push button or switch for manual control, will do the job. If however, you wish to have your animation automated, you can go a bit further. For my first attempt I have made a badger to pop in and out of its sett when a train passes. For this I have used two reed switches built into the track, with a magnet under the train. These are connected to a twin coiled latching relay, to keep the current applied. Switch 1 = on, switch 2 = off.

I bought these bits from [All Components](#). The latching relays are really quite small and almost silent - nothing like those thumping great turnout motors. Although the pin layout may be different on the ones you get, I have included a diagram for the ones I used. I hope this helps.



Maybe instead of reed switches, you may wish to tie in your animation to a turnout movement. I have a working hoist that goes up and down, according to the throw of a turnout. If you use Tortoise, Fulgurex or Lemaco turnout motors, simply use the auxiliary switches. If you use Peco motors, they sell an auxiliary switch that can be fitted. If you use wire-in-tube or similar, you can add a couple of micro lever switches.

***With the reed switch setup, it might be a good idea to incorporate a manual switch to turn the whole thing off. Using a Double pole, single throw (DPST) switch, you can connect the relay feed to one pole and the memory wire feed to the other.***

***I hope this all makes sense. I've kept it as technically simple as possible. If you have any queries or wish to know more, please Email me and I'll try to help.***

***Of course, without the memory wire, the latching relay and switches can be used for all sorts of automatic switching on and off for many things around the layout. Ideas such as house lights turning on and off, switching on sound modules, smoke units, etc.***

***If you watch the little video on the Modelling tips page, you will see a door opening and closing. This one is controlled by a push button. It's there for visitors to play with and give them a chuckle. I hope to add more as time goes on.***

***On a previous layout I had a chimney sweep's broom popping out of a chimney. The mechanics I used to make it work were enormous, clumsy and very temperamental. Now with memory wire it would be simple.***

***Maybe.....***