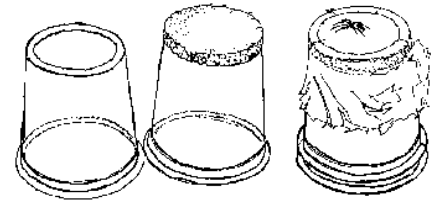


Make a spi-pot!

In the excellent Collins field guide *Spiders of Britain and Northern Europe*, Michael Roberts showed how to use plastic drinking cups and cling-film to make a *spi-pot* that allows detailed examination of live spiders in the field.



His innovation is not used as widely as it might be. There are problems with using drinking cups, including their bulkiness and their flimsiness as well as a lack of control over the movement of the 'plunger'. This crib-sheet outlines a variation on Roberts' design which addresses these problems.

The method is based on making a spi-pot barrel from any rigid, parallel-sided plastic tube and cutting a plunger to fit inside this from foam sheeting. The result is a small, robust, controllable and versatile spi-pot.



The bottom part of a toothpaste dispenser makes a good spi-pot barrel, but any parallel-sided, rigid tube can be used (e.g. washing machine waste pipe). Remove the label and use white spirit to clean up any glue left on the barrel.



Use a hacksaw or similar to cut a length of tube (here around 6 cm). To get a level cut, wrap a strip of paper around the tube as a guide. Use fine sandpaper to smooth the cut end (a rough end will quickly damage the cling-film).



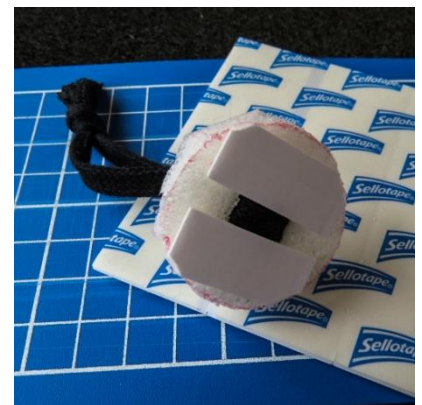
The plunger is made out of foam sheeting – such as used for pipe lagging, packaging or a camping mattress. Draw around the *inside* of the spi-pot barrel to create two circles on the foam sheet.



Use a sharp craft knife to cut the circles of expanded foam. It works best if you insert the knife right through and turn the foam as you move the knife in a cutting motion. Cut close to the *outside* of the pen circle to make the plunger fit snugly in the spi-pot barrel without it being too tight to move freely.



Cut two small slits in one of the foam circles (not too close together) and thread a length of flat shoelace through as shown. Cut off and tie. You use the shoelace to withdraw the plunger from the spi-pot barrel.



Place two double-sided sticky foam pads onto the foam circle as shown – with any protruding bits trimmed off.



Place the second foam circle over the first, securing in place with the sticky foam pads. Insert into the spi-pot barrel - if the plunger does not give a stable surface, you can add a third foam circle to give it more depth and stability.



Use the craft-knife to cut two shallow grooves (V in profile) – one on either side of the plunger. These allow air to pass when it is inserted or withdrawn, avoiding damage to the cling-film and spider. Don't make them too big, or small spiders could escape!



Fold a strip of cling-film about as wide as the spi-pot barrel is high and wrap tightly around the outside of the barrel to give a surface onto which the rest of the cling-film can grip. Roughly winding some sellotape round it first can help prevent the cling-film from sliding on the barrel.



Take another piece of cling-film and stretch over the open end of the spi-pot barrel, twisting it around the cling-film which is wrapped around the barrel. A taught stretch gives you the best views.

Remove the plunger and drop a spider into the barrel (onto the cling-film 'window') and replace the plunger into the bottom end of the barrel.

An advantage of this spi-pot design is this control you have over the plunger. With the plunger acting as a lid, the spider is now safe & secure in the spi-pot and free to move around while you hunt around for a lens or whatever else you need to look at it!



When you are ready to take a closer look at the spider, use your finger to push the plunger further in – moving the spider towards the cling-film window. The amount you push the plunger in depends on the size of the spider and how much you want to restrict its movement.

To look carefully at small structures, such as palps or epigynes, push the plunger in far enough to stop the spider moving. The elasticity of the cling-film and foam stops the spider from being hurt – but you should be careful not to use more pressure than necessary since spiders can be quite soft-bodied and it would be possible to damage them if you were very careless.

To get the spider in just the right position before pushing the plunger in the last bit to stop it moving, you may have to move the spi-pot around. For example, holding the spi-pot upside down so that the spider stands on the cling-film and then pushing the plunger in, traps the spider on its back, allowing you to get a good view of its underside.



With structures like palps and epigynes immobilised against the cling-film, you can successfully use very powerful magnifiers in the field (despite their limited depths of field), like the illustrated magnifier with built-in led lighting available for just a few pounds on the internet. You can also use 'digital microscopes' or digital cameras to obtain reasonable pictures through the cling-film.

The spi-pot can be used for other invertebrates too! Have fun! 😊

