2 or 4-METRE "FLOWERPOT" DIPOLE

Based on a design by VK2ZOI

Dimensions given for 2-metres, with dimensions for 4-metres in brackets(). Final length can be decided after construction by cutting off the bottom. [Drawing not to scale]

Machine-up an end cap, drill and tap it to take an M4 screw and solder tag.

Bore or drill out reducer to 23mm. Check that 21.5mm pipe and end cap will pass through it.

Drill 15mm hole in stop end fitting.

The reducer is a loose fit over the end of the 32mm pipe (as it is actually designed to fit inside a larger pipe), use plenty of glue to fill the space. Set aside to harden.

Fit end cap to 21.5mm pipe and measure down 91cm (206cm), mark and drill tangentially-angled 6mm hole (upper hole).

Measure down a further 5.5cm (10.5cm), mark and drill 6mm hole (lower hole), angled the opposite way from the previous hole .

Remove end cap.

Push the co-ax into the upper hole and upwards until about 60cm (120cm) of it projects from the top end of the 21.5mm pipe.

Slip about 5cm of heat-shrink sleeving over the co-ax and slide it down at least 40 cm.

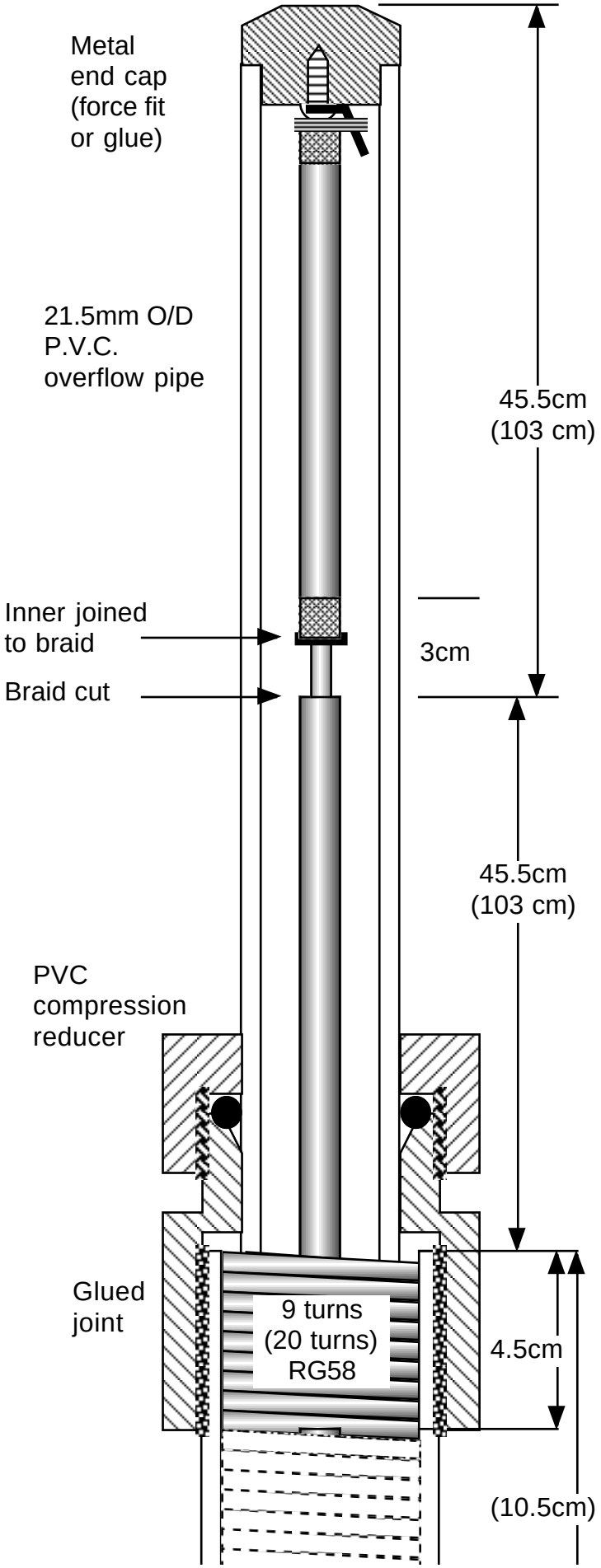
Screw a solder tag to the end cap.

Make a helical coil from 5 turns of tinned copper wire on a 3mm drill shank. Remove outer and inner insulation from 3cm of the end of the co-ax. Twist the braid and centre conductor together and insert them into the helical coil. Slip the coil and wires over the tag and solder them in place.

Measure 45.5cm (103cm) down the co-ax from the top surface of the end cap and make a circular cut around the outer insulation, taking care not to damage the braid or inner insultation.

Make a second circular cut about 3 cm above the previous cut, then cut the outer insulation lengthways between the two circular cuts and peel it off.

Carefully cut the braid as near to the bottom circular cut as possible, without damaging the inner insulation. Splay back the braid to expose the inner insulation.



Cut the inner insulation mid way between the two circular cuts and again at the top cut. Remove the upper section.

Wrap the braid around the exposed inner conductor and solder them together.

Melt some hot-melt glue over the cut area and for a short distance each way along the outer insulation. Slide the heat-shrink sleeving over the joint and heat it until the glue runs and fills the joint.

Draw the co-ax back into the pipe until the end cap can be fitted into the end of the pipe. Evo-stick can be smeared on the barrel of the cap for extra water protection

Lay the co-ax in a straight line on the ground, with no twists or kinks. Prepare a 25 cm length of electricians' insulation tape and place it somewhere handy.

Rotate the pipe to tightly wind on 9 turns (20 turns) of co-ax, this should just reach the lower hole. Bind in place with the insulation tape. Cut the remaining co-ax to the length which will finally be required for the downlead.

Push the co-ax into the lower hole and downwards; keep pushing it through until the coil is pulled tight. Remove the insulation tape and 'work' the coil around and downwards by hand to ensure it is tight.

Fit a suitable plug to the end of the co-ax and check that the SWR is correct over the required frequency range. (Hold the dipole at the bottom, with the top well clear of any objects when doing this.)

Dismantle the reducer and feed the dipole into the 32mm pipe from the open end until it has emerged through the reducer. Re-assemble the reducer and use it to clamp the dipole with a suitable length projecting.

Feed the plug and cable through the stop end components and the 15mm hole in the stop end...Fit the stop end components over the pipe and tighten them in place.

Make a single cut in a grommet to fit it over the co-ax and ease it into the hole in the stop end..