

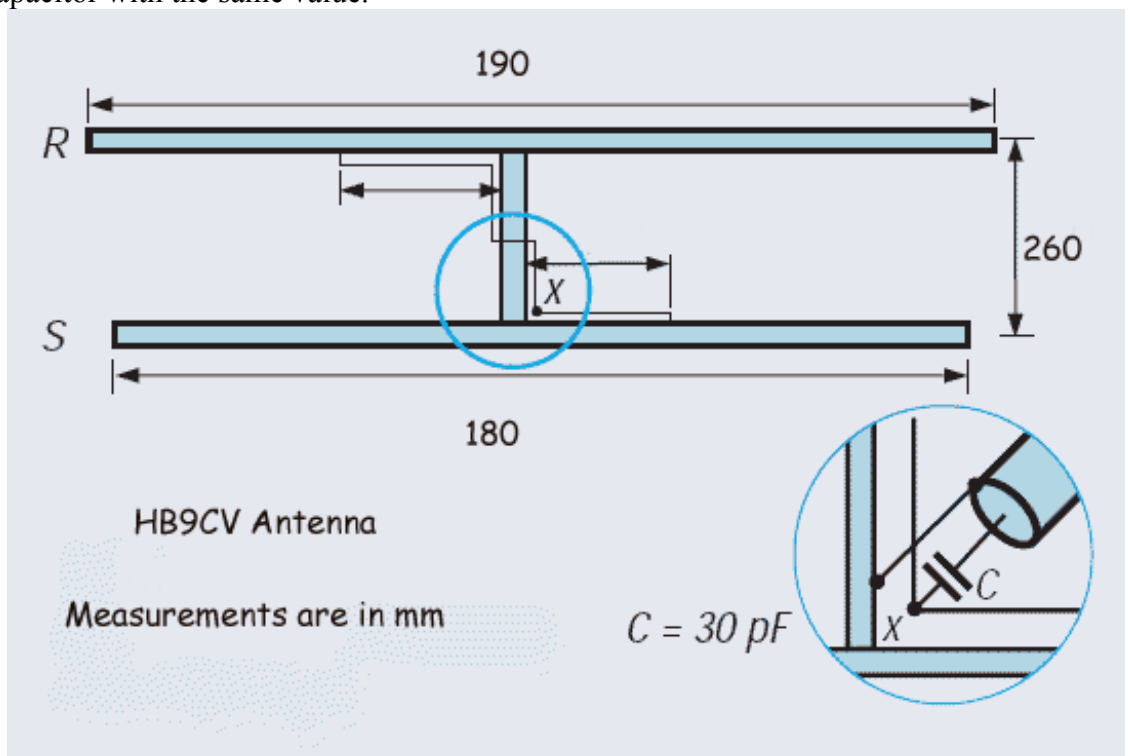
A VERY DIRECTIONAL ANTENNA BY HB9CV

GREAT FOR FOX HUNTING: You can view the antenna at [DX Zone](#).

I built this antenna years ago for receiving weather satellites. It is very directional with lots of gain.

The HB9CV-Beam is a 2-Element-Yagi with two driven elements and was introduced by Rudolf Baumgartner, HB9CV, in the 1950ies. The Beam is a coax-fed version of the ZL-Special. The reflector is fed 225° out of phase. The distance between the two elements is $1/8$ -Lambda (45°), with the two crossed phase lines of 180° results the 225° .

You will get the beam very easy to work, because the influence of the element-diameters is much less critical than by parasitic Yagis, where the tapering and the element diameters are very important for the mechanical length of the elements. The gain is in the range of 4,1-4,2dBd. The HB9CV has a great bandwidth and a very good F/B, which are more dependent on the phase shift and the two driven elements than on the physical lengths of the elements and their individual dimension. The mechanical construction is a little bit difficult for the phasing lines and you need a compensation-C for tuning the SWR. For tuning use a variable capacitor (max. C see below), tune for best SWR ($<1,2$) and use then a fixed capacitor with the same value.



The boom is 25x25 mm made of aluminum. Elements are 1mm round aluminum. The 15 pf capacitor (fixed) is mounted at the front of the antenna. [See photo](#) for mounting detail. However, you may want to use a small 30pf variable to get the SWR as low as possible then replace it with a fixed value. A 15pf will work fine if you have no way to check the final capacitance. I suggest you extend the boom to hold onto it and perhaps mount your portable 2m radio on it somehow. Good fox hunting. VE3COJ