

## Operating instructions for the probe PH MASDVT850W6 BL2.5 X/Y/H DBB (H13856/0001)

The probe is delivered in  $\lambda/4$  mode

### 1. Listing of the included X/Y stop circuit coils

Coil with 8.5 turns	X range f/MHz	Y range f/MHz
$\lambda/2$ - mode	139 - 233	57-97 / 86-138
$\lambda/4$ - mode	108 - 177	35-81 / 35-103
Coil with 6.5 turns	X range f/MHz	Y range f/MHz
$\lambda/2$ - mode	140 - 230	60-103 / 88-140
$\lambda/4$ - mode	111 - 176	35-84 / 36-105
Coil with 5.5 turns	X range f/MHz	Y range f/MHz
$\lambda/2$ - mode	140 - 235	72-117 / 99-156
$\lambda/4$ - mode	134 - 180	39-100 / 39-111
Coil with 3.5 turns	X range f/MHz	Y range f/MHz
$\lambda/2$ - mode	159 - 244	97-141 / 111-170
$\lambda/4$ - mode	157 - 180	42-110 / 43-115

### 1. Changing the stop circuit coil

1. Unscrew (but don't remove) 4 screws at the flange of the *shielding tube* and remove the tube.
2. Unscrew the two M2.5-fixing screws (Fig. 1 below) and remove the installed stop circuit coil and change it by a disered one. Install the new coil in the opposite way; do not tighten the screws too much.
3. To adjust the optimize stop circuit frequency it is necessary to use a Network-Analyzer and connect it between X and Y- channel at the probe (reflection  $\rightarrow$  X-connector; transmission  $\rightarrow$  Y-connector), see fig.2 below
4. Slide on the shielding tube and lock it.
5. First tune and match  $^1\text{H}$ , then X and at last Y-channel. Repeat this procedure for fine tuning.

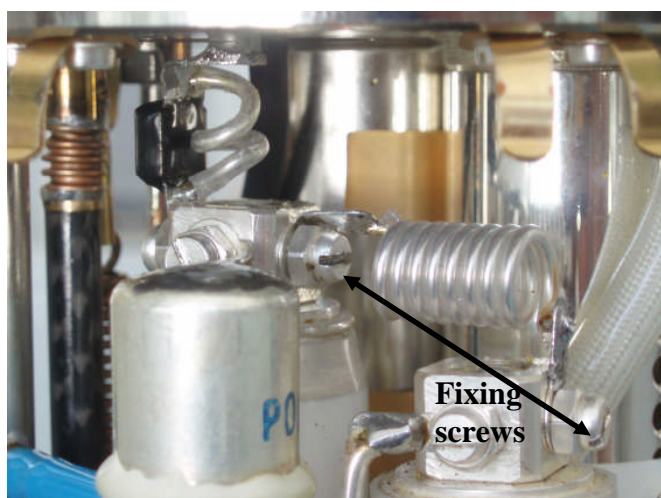


Fig.1 Position of the stop circuit coil

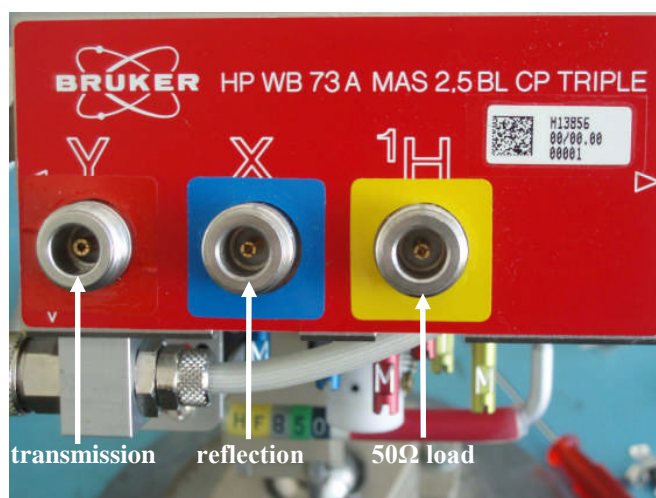


Fig.2 probe connectors

## 2. Changing between $\lambda/2$ - and $\lambda/4$ -mode in doppel resonance mode

1. In case of operating in  $\lambda/2$ -mode, frequency range see list, it is necessary to remove the *short circuit screw* (at the  $\lambda/2$ -tube of the  $^1\text{H}$ -channel, see Fig.3, below). In the other case in  $\lambda/4$ -mode, frequency range see list, use the marker at the  $\lambda/2$ -tube and *carefully* turn in the screw equally and continuously until one has contact with the inner conductor of the  $\lambda/2$ -line. Do not turn this screw too far in order to avoid bending or damage of the inner conductor. Slide on the shielding tube and lock it.
2. First tune and match  $^1\text{H}$ , and then X and Y. Repeat this procedure for fine tuning.



Fig.3 screw out  $\rightarrow$   $\lambda/2$ -mode



Fig.4 screw in  $\rightarrow$   $\lambda/4$ -mode

## 2. Adjustment for Optimization of the stop circuit frequency

1. Adjust the stop circuit frequency by turning the black rod at the bottom of the probe, see Fig.5 and observe the isolation at the Network- Analyzer, see Fig.6 and Fig.7

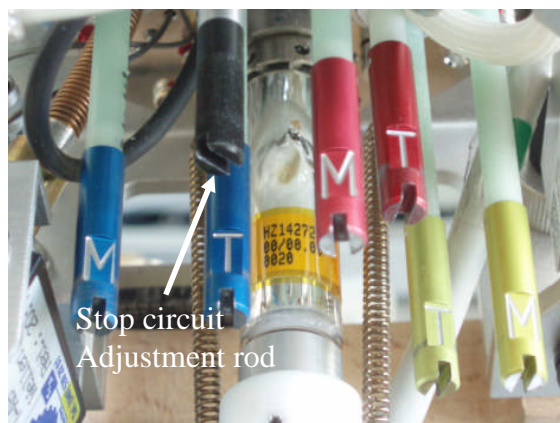


Fig.5 Adjustment rod of the stop circuit frequency

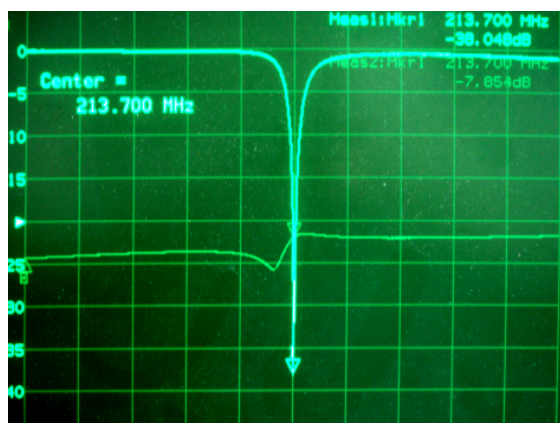


Fig.6  $^{13}\text{C}$  stop circuit frequency **not** optimized

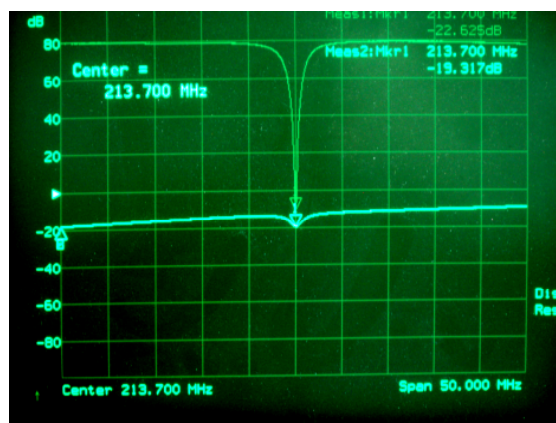


Fig.7  $^{13}\text{C}$  stop circuit frequency optimized