

Operating instructions for the probe PH MASDVT850W6 BL2.5 N-C/F/H (H13894/0001)

Listening of the available frequency range

$^{15}\text{N}-^2\text{H}$ $\lambda/4$ mode shunt cap only for ^{15}N	X f/MHz	$^{19}\text{F}/^1\text{H}$ f/MHz
$^{15}\text{N}-^2\text{H} / ^{19}\text{F}/^1\text{H}$	86 – 130	800/850

$^{29}\text{Si}-^{13}\text{C}$ $\lambda/4$ mode without shunt capacitor	X f/MHz	$^{19}\text{F}/^1\text{H}$ f/MHz
$^{29}\text{Si}-^{13}\text{C} / ^{19}\text{F}/^1\text{H}$	169 – 213	800/850

Changing and modifications

- In case of operating in ^{15}N experiments it is necessary to install an additional shunt capacitor of 47pF parallel to the X-tuning capacitor (**only for ^{15}N**) as shown in Figure 1 and set the short circuit screw at the $\lambda/4$ -tube as labeled to the $^{15}\text{N}-^2\text{H}$ position, see Figure 2. The same position is used up to ^2H (130MHz). In the other case in the upper X-range (169-213MHz), e.g. $^{29}\text{Si}-^{13}\text{C}/^{19}\text{F}/^1\text{H}$ set the short circuit screw as labeled to the $^{29}\text{Si}-^{13}\text{C}$ position, see Figure 3.
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
- First tune and match ^{19}F and ^1H one after another, and then X. Repeat this procedure for fine tuning.



Figure 1: position of the shunt capacitor



Figure 2: short circuit screw in $^{15}\text{N}-^2\text{H}$ position



Figure 3: short circuit screw in $^{29}\text{Si}-^{13}\text{C}$ position

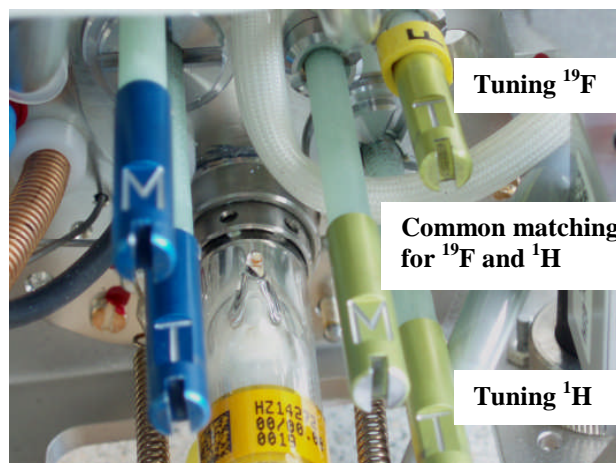
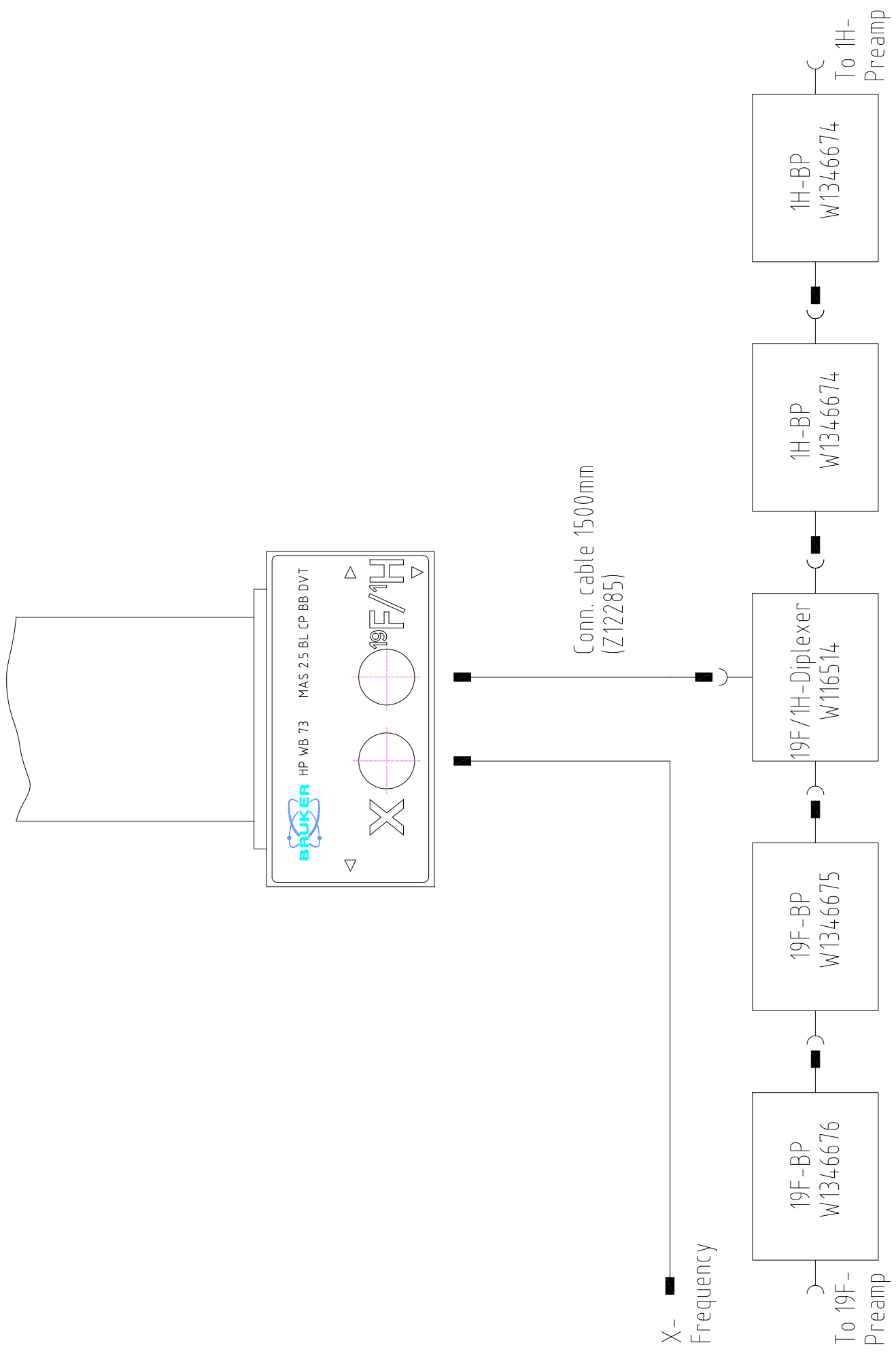
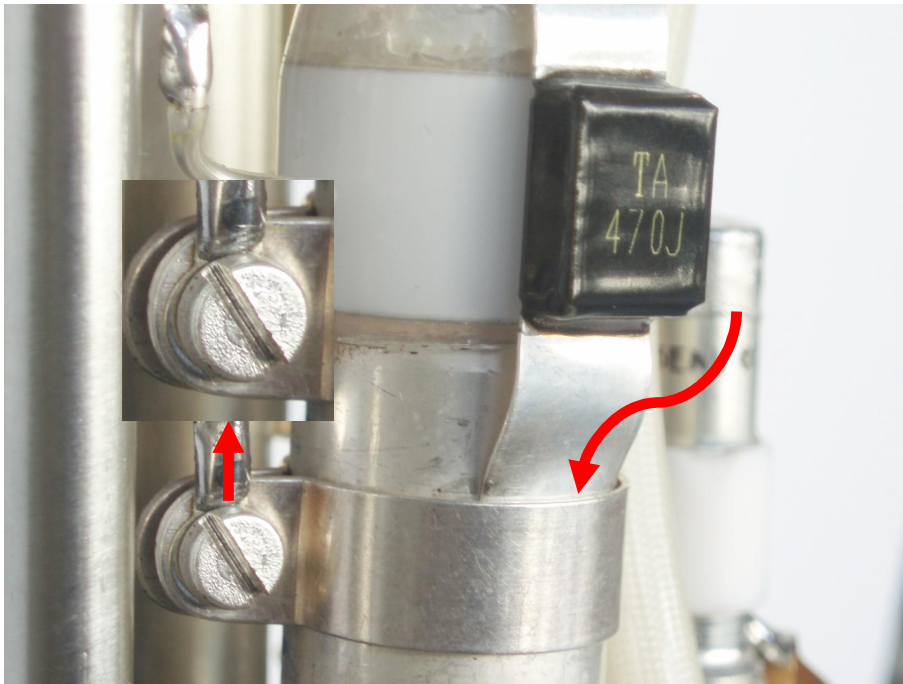


Figure 4: tuning and matching rod for ^{19}F and ^1H

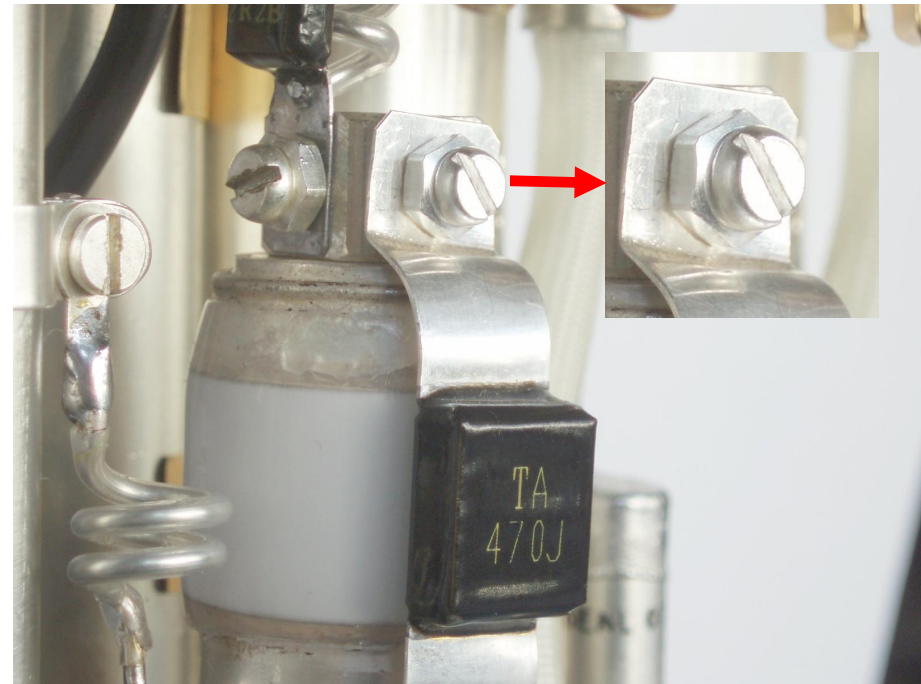


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Installation of the shunt capacitor



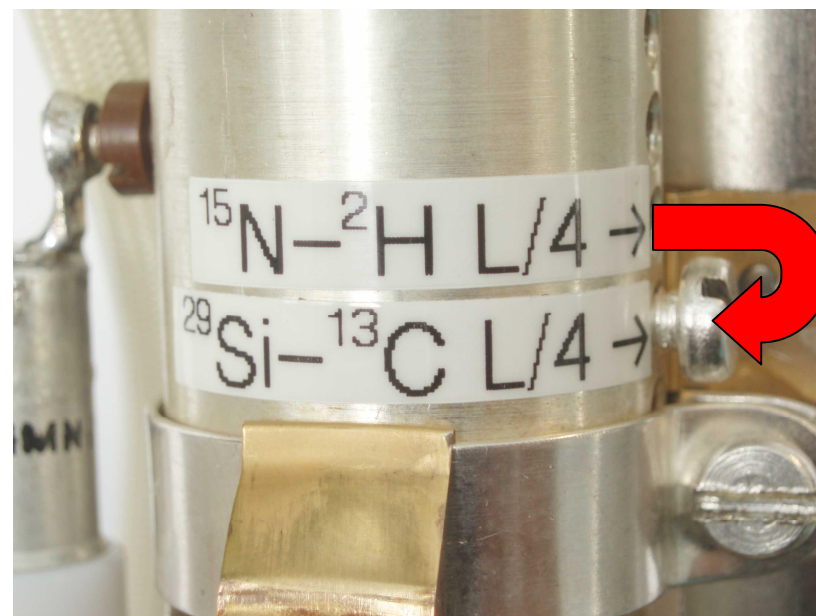
First loosen the fixing screw of the clamb and insert the lead of the shunt capacitor between the clamb and the X-tuning capacitor and fix the screw again



Fixing the upper lead of the shunt cap. with a M2.5 screw at the top of the X – tuning capacitor

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Changing between $^{15}\text{N}-^2\text{H} - \lambda/4$ and $^{29}\text{Si}-^{13}\text{C} - \lambda/4$



$\lambda/4$ - position	frequency range f/MHz
$^{15}\text{N} - ^2\text{H}$ with shunt	85.0 – 92.7
$^{15}\text{N} - ^2\text{H}$ without shunt	92.8 – 130.5

$\lambda/4$ - position	frequency range f/MHz
$^{29}\text{Si} - ^{13}\text{C}$ without shunt	168.9 – 218.0

Note: The optimized common matching of ^{19}F and ^1H depends on the X-channel adjustment, therefore two different $\lambda/4$ – positions are needed