Inserting/extracting the probe

At the beginning of the session the SXR1-4 probes (located at 300T, 75,165,315 and 45P) should be inserted in their measurement positions, while at the end of the day the same probes should be extracted, to protect the Be filters. List of actions for each probe:

Insertion (the probe is already connected to MST)

1. the V1 valve (Fig.1) of the roughing line should be already open and must be left open;
2. the V2 valve (Fig.1) of the roughing line should be already closed and must be left closed; for SXR2 this valve is in the rear part;
3. open the VAT valve. MST pressure should remain the same;
4. for SXR1, remove the white plastic spacer (Fig.2) and put it somewhere on the probe;
5. insert the probe at its measurement position. For SXR1 use the ¾" speed handle, for SXR2 use the pivoted ratchet wrench, for SXR3 and 4 use one of the two 17 mm speed handle. To insert SXR1,3,4 turn the threaded rod CW, and CCW for SXR2. A portable drill can be used for faster movement;
6. insertion values are **109 mm** for SXR1, **121.5 mm** for SXR2 (obtained by fully inserting the probe) and **131 mm** for SXR3 and SXR4 (knife edge side);
7. check the poloidal alignment of the probe. For SXR2 use a bubble lever placed on the cables flange;
8. check that all power supplies of amplifiers and iso-amps are on;
9. set the gains (transimpedance and iso-amp gains). Possible setting are 1x, 2x, 5x for iso-amplifiers and 10^5, 10^6, 10^7 for TLAs; diodes 109 and 110 have 10^6, 10^7, 10^8;
10. check the data acquisition: from mstdata@aurora type `fd`, then `sxr_mst_set_acq`, click anywhere on the IDL window and use the buttons to toggle the probe channels on;
11. set the parameters in the pulsefile, using the IDL program `sxr_mst_write_par`. Leave this program running all the time the SXR tomography is used. **Anytime the gains are changed these parameters should be written in the pulsefile**. Please follow the instructions in the attached document "SXR TOMOGRAPHY Handy Book".

Extraction (without removing the diagnostic)

1. annotate the MST and roughing line pressure (usual values are 1x10-6 Torr and 10 mTorr, resp.);
2. extract the probe to the end. For SXR1 use the ¾" speed handle, for SXR2 the pivoted ratchet wrench and for SXR3 and 4 use one of the two 17 mm speed handle. To retract SXR1,3,4 turn the threaded rods CCW, and CW for SXR2. A portable drill can be used for faster movement;
3. in order to close the VAT valve of SXR1 this probe should be further extracted about 2 cm, use the white spacer (see Fig.2);
4. in order to close the VAT valve of SXR2 retract the probe until the 4.675" gauge fits between the big nut and the short vertical tube;
5. close the gate valves and set them to shutter the probes; pressure should not change;
6. the V1 valve (Fig.1) should be already open. Leave it open;
7. the V2 valve (Fig.1) should be already closed. Leave it closed; for SXR2 this valve is in the rear part;
8. check that all power supplies of amplifiers and iso-amps are on;
9. set the parameters in the pulsefile, using the IDL program `sxr_mst_write_par`;
10. check the data acquisition: from mstdata@aurora type `fd`, then `sxr_mst_set_acq`, click anywhere on the IDL window and use the buttons to toggle the probe channels off.

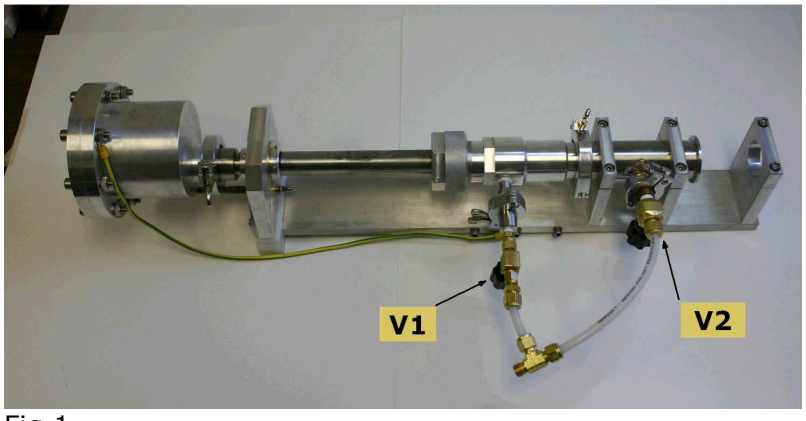

Fig.1

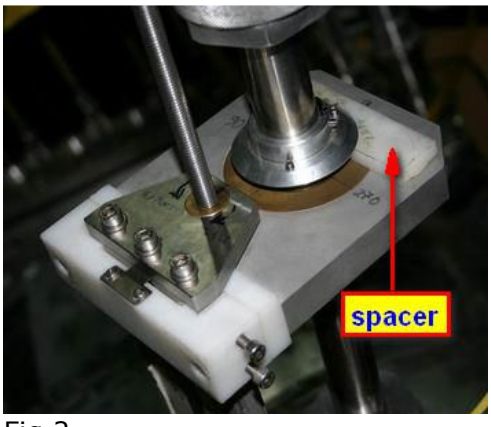

Fig.2

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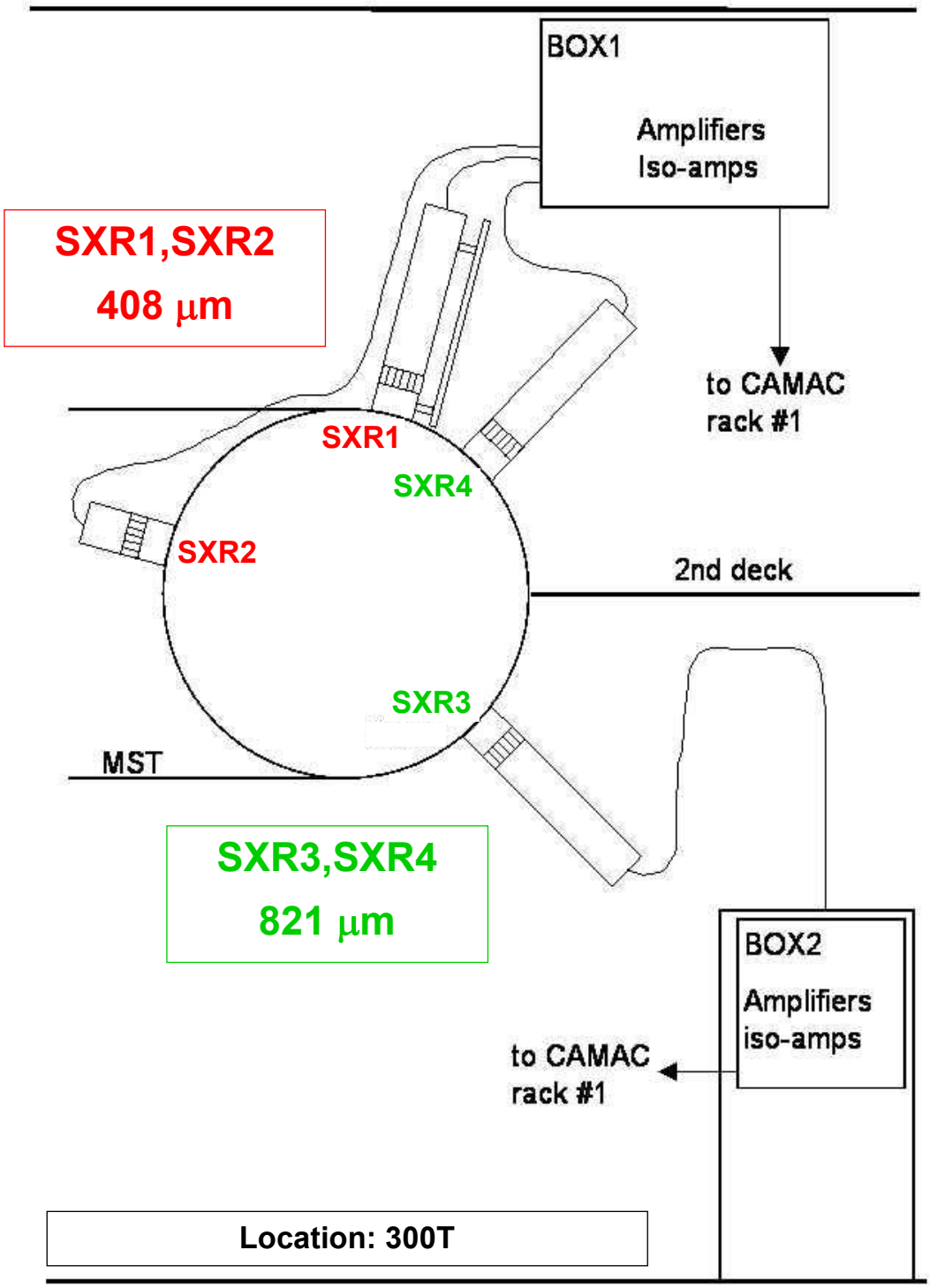
SXR TOMOGRAPHY LAYOUT



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