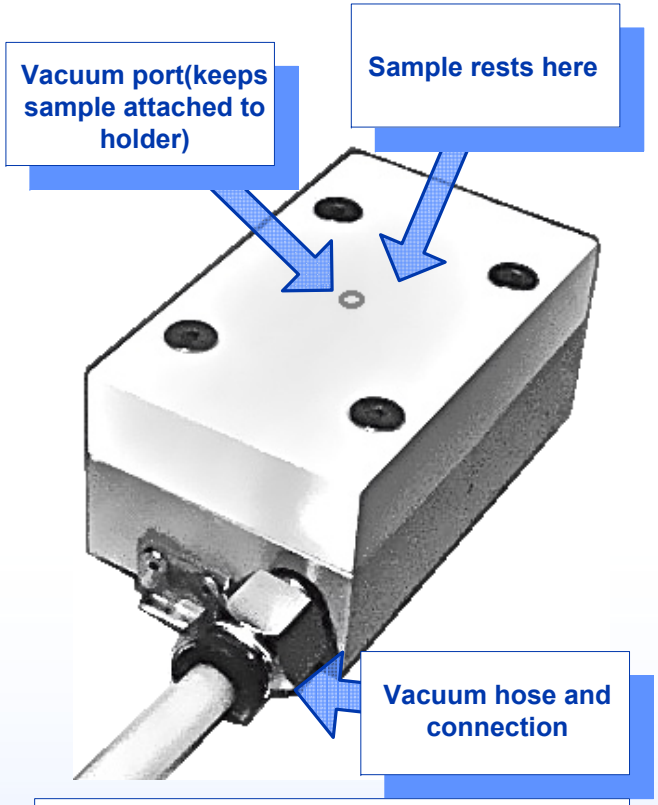
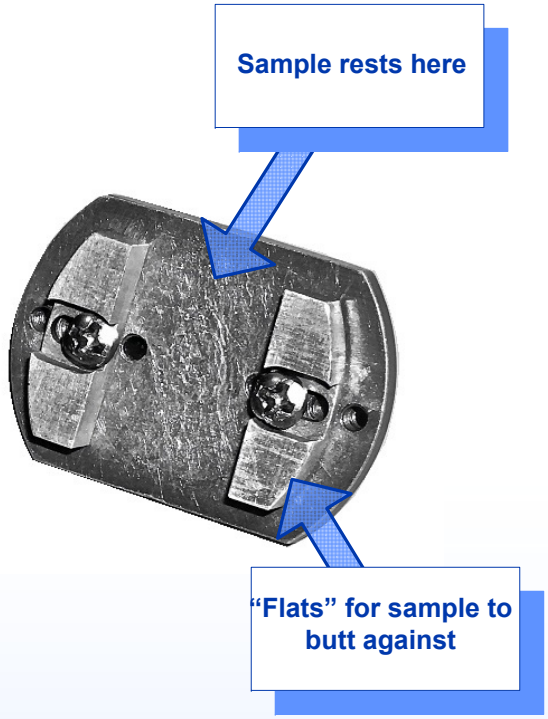
MAGNETIC REFLECTOMETER SAMPLE HOLDERS

ROOM TEMPERATURE SAMPLE HOLDER



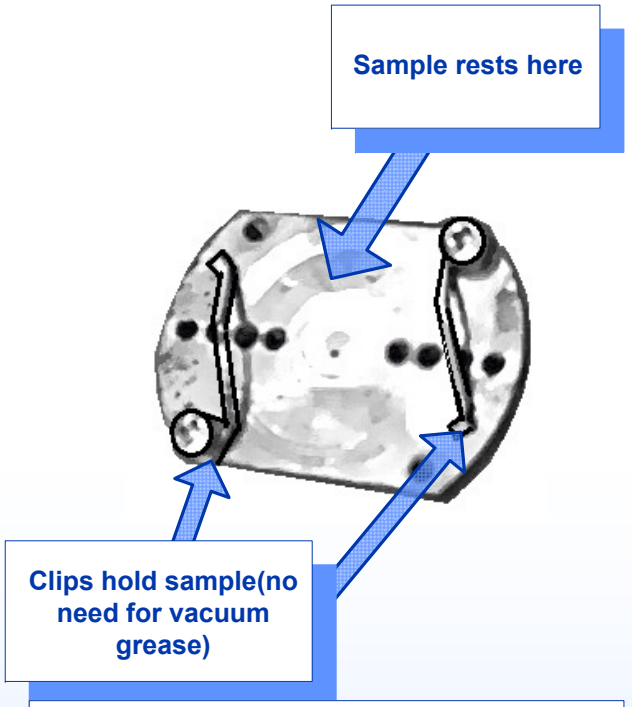
- Holds samples up to 50mm X 100mm
- Mounts into the aluminum alignment block
- Utilizes a vacuum pump and hose to hold the sample to the mounting surface via a vacuum port in the middle of the sample holder

SAMPLE HOLDER FOR DISPLEX (LOW TEMPERATURE)

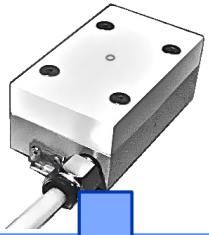
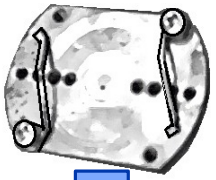
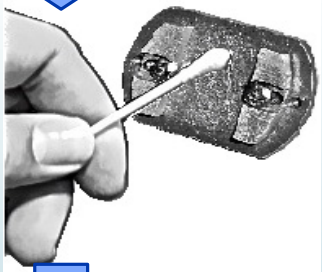
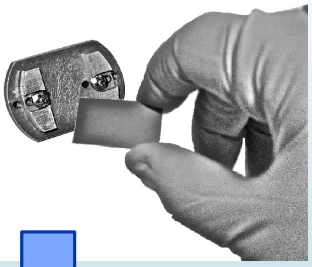
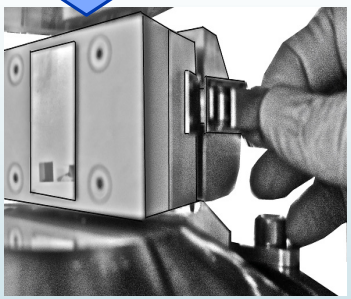


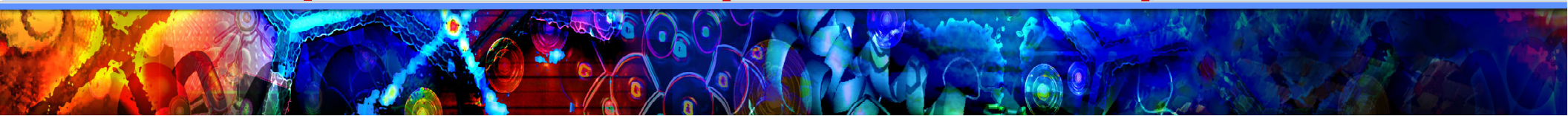
- Maximum sample size is 20mm X 20mm
- Sample is fixed with vacuum grease
- Mounts to Displex cold finger
- Used in Displex for temperatures between 5 – 300 Kelvin
- Does NOT allow for rotation of sample

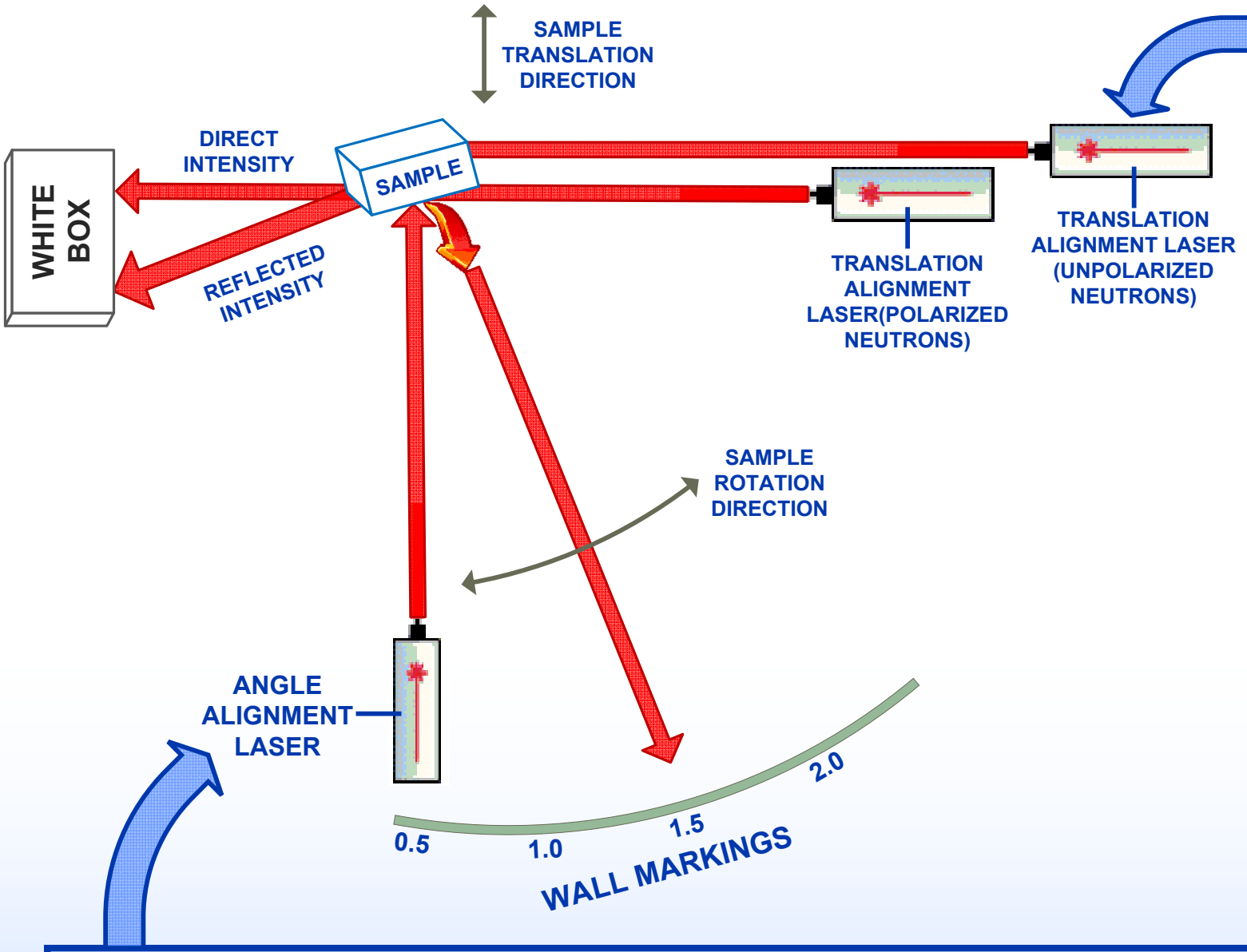
SAMPLE HOLDER FOR DISPLEX (LOW/HIGH TEMPERATURE)



- Maximum sample size is 20mm X 20mm
- Sample is fixed with clips
- Mounts to Displex cold finger
- Used in Displex for temperatures between 500 – 750 Kelvin
- Allows for rotation of the sample

	ROOM TEMPERATURE SAMPLE HOLDER	LOW TEMPERATURE SAMPLE HOLDER	LOW/HIGH TEMPERATURE SAMPLE HOLDER
STEP ONE: Choose the appropriate sample holder (see previous page for details)			
STEP TWO: Prep the sample holder	Place vacuum hose on chuck and turn on vacuum pump 	Using a swab, apply a thin layer of vacuum grease to surface 	No prep necessary, just ensure clips are working properly.
STEP THREE : Place the sample on/in the sample holder	Place sample on surface and adjust 	Place sample on surface between rests and adjust 	Place sample on surface and secure with clips 
STEP FOUR : Put sample and sample holder into the unit	Place in aluminum alignment block and secure with clips 	"Thread" sample holder onto Displex cold finger. Make sure that absorbing ring is properly fitted while threading. 	"Thread" sample holder onto Displex cold finger. Make sure that absorbing ring is properly fitted while threading. 





STEP SIX :

Adjust the translation of the sample (same for all types of holders)

Turn on power (polarized neutrons or unpolarized neutrons unit)

Place white box 1 ft downstream from sample in path and look for dots. You should two. If you have one, readjust angle to 0.5 degrees above zero.

Go to CPU

Find the column POS and go to XSAMPLE. Adjust units until two dots are visible.

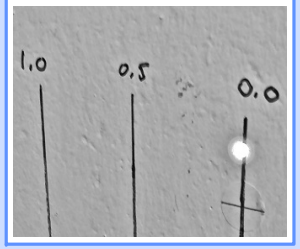
Turn power off to both pre-alignment lasers. Final alignment will be done with neutron beam.

STEP FIVE :

Adjust the angle of the sample(same for all types of holders)

Turn on power (on wall)

Note reflection angle on wall markings.



Go to CPU

Find the column POS and go to SANGLE. Subtract wall mark from this and input into blank box on right.

After unit adjust/ readjust a few times, reinput angle 0.2 to 0.3 degrees above zero.

SAMPLES

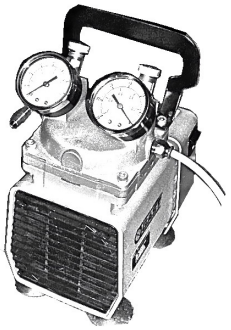
A FEW NOTES ABOUT SAMPLE MOUNTING AND PRE-ALIGNMENT

The lasers used for optical alignment are Class 3A lasers. These lasers are not capable of causing injury unless viewed through focusing optics. Use of the theodolite located in the instrument cave is FORBIDDEN while the alignment lasers are in use, and care should always be taken when working with lasers, regardless of their classification or power.

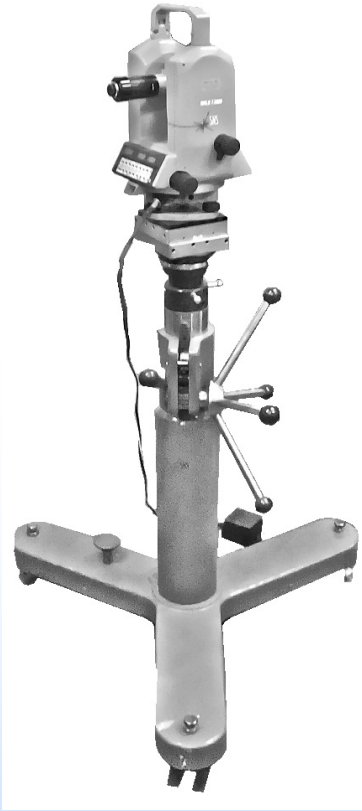
Changing between the room temperature holder and the displex cold finger is a manual process (please see beam line staff for assistance).

Remember, to determine the number to input into the blank cell on the computer, subtract the mark on the wall from the POS column cell value on the SANGLE row. This may mean you need to enter a negative value.

Remember that the low temperature and low/high temperature holders do not require a vacuum pump. They use a thin layer of vacuum grease and clips respectively to hold the sample secure.



Vacuum pump used with the room temperature sample holder.



Theodolite located near computer.

HAZARDS

ELECTRICAL HAZARD
This equipment contains electrical units that may come into contact with skin or liquids.

MAGNET HAZARD
This equipment contains or operates near magnetic elements.

PINCH HAZARD
This unit has parts which may pinch or catch clothing or body parts if care is not taken.

LASER HAZARD
This unit is operated near lasers which, if used improperly, can cause injury.

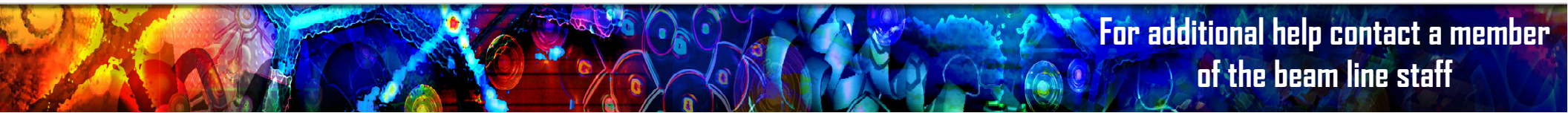
FIRE HAZARD
Any improper use of this unit may cause a fire hazard.

PREVENTION

EYE PROTECTION
Wear safety glasses while operating.

NON-SLIP, CLOSED SHOES
Wear non-slip, closed shoes to avoid spills.

READ MANUAL
Become familiar with this guide before operating.



For additional help contact a member of the beam line staff