



Crab Cavity Peripheral devices

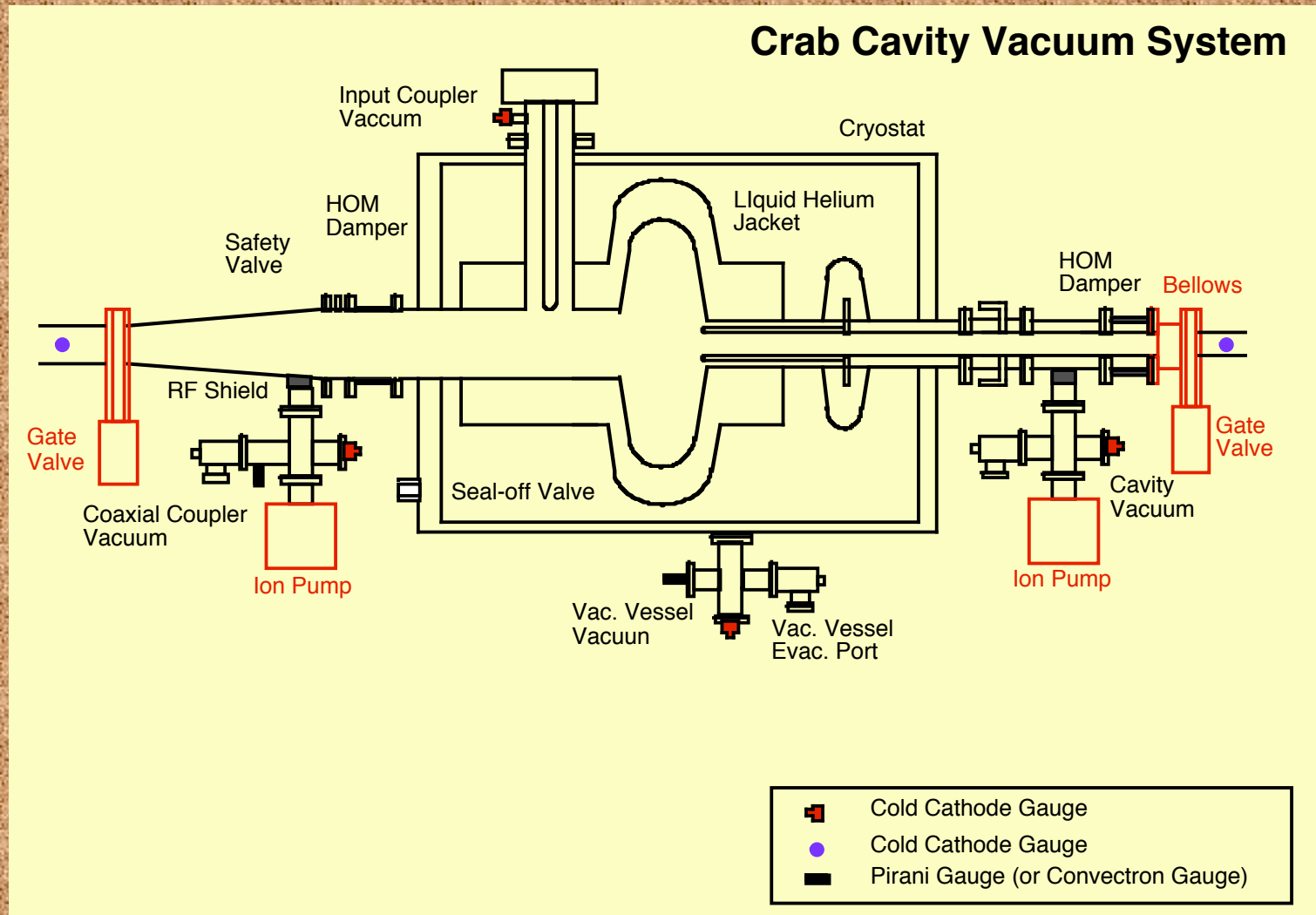
KEKB Crab Cavity Group
- presented by NAKAI Hirotaka

Overview

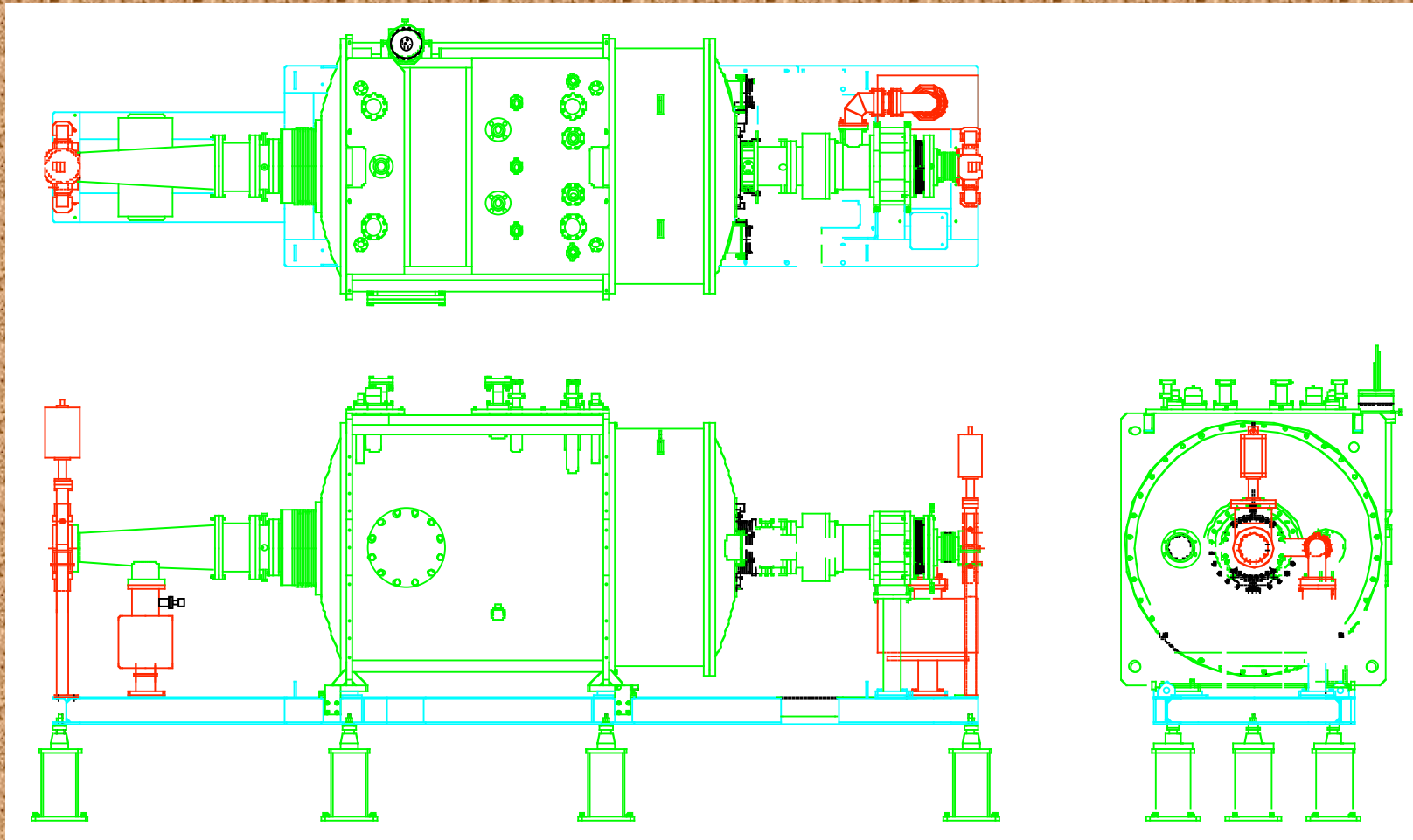
- Peripheral devices of crab cavities
 - Vacuum system
 - RF components
 - HOM absorber (damper)
 - Notch filter
 - Input coupler
 - Coaxial coupler
 - Frequency tuner
 - Cryogenic transfer lines

● Vacuum System

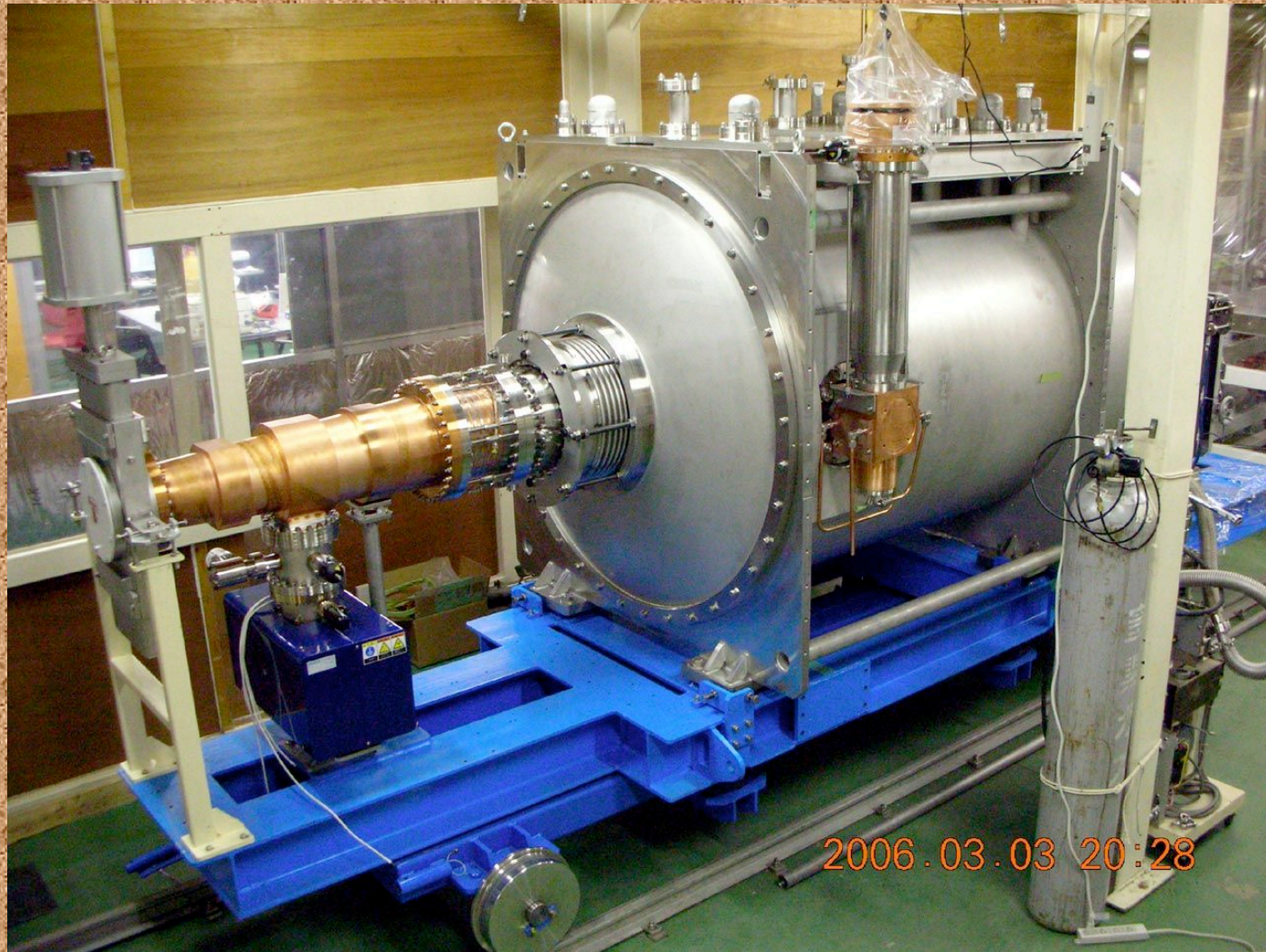
Vacuum System Schematic



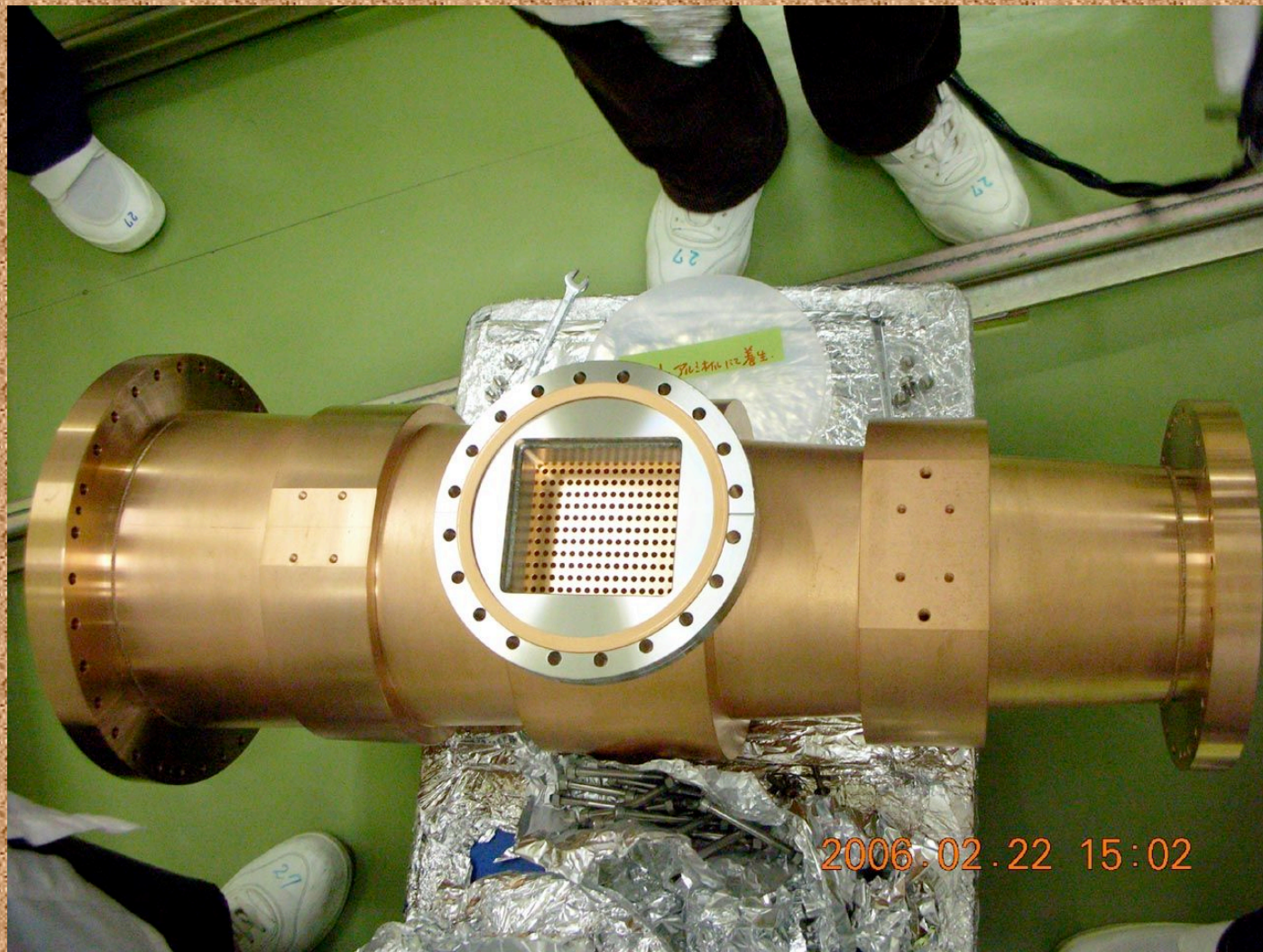
Cryostat Vacuum Setup



Vacuum Setup



RF Shield of Beam Tube

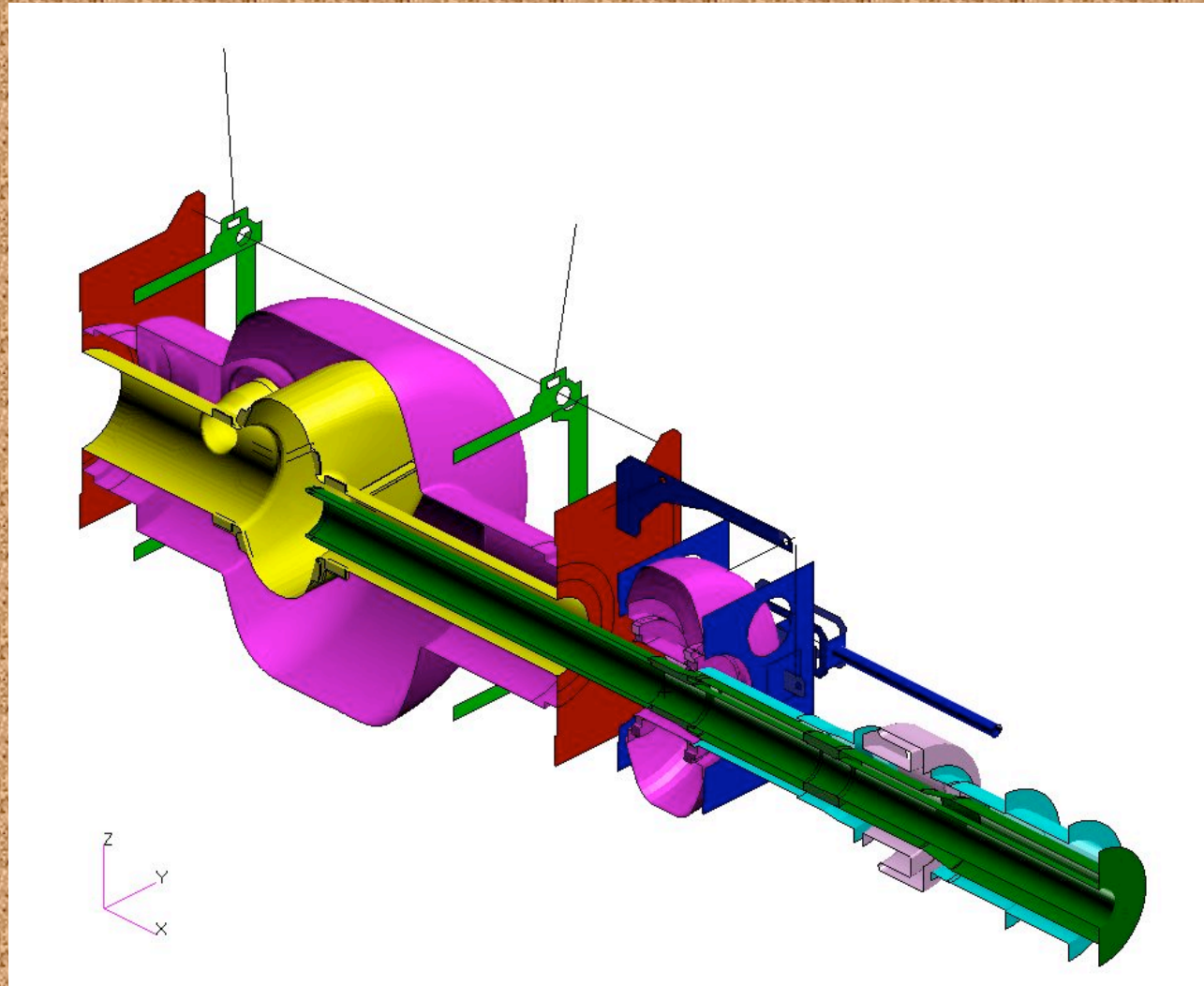


RF Shield of Beam Tube

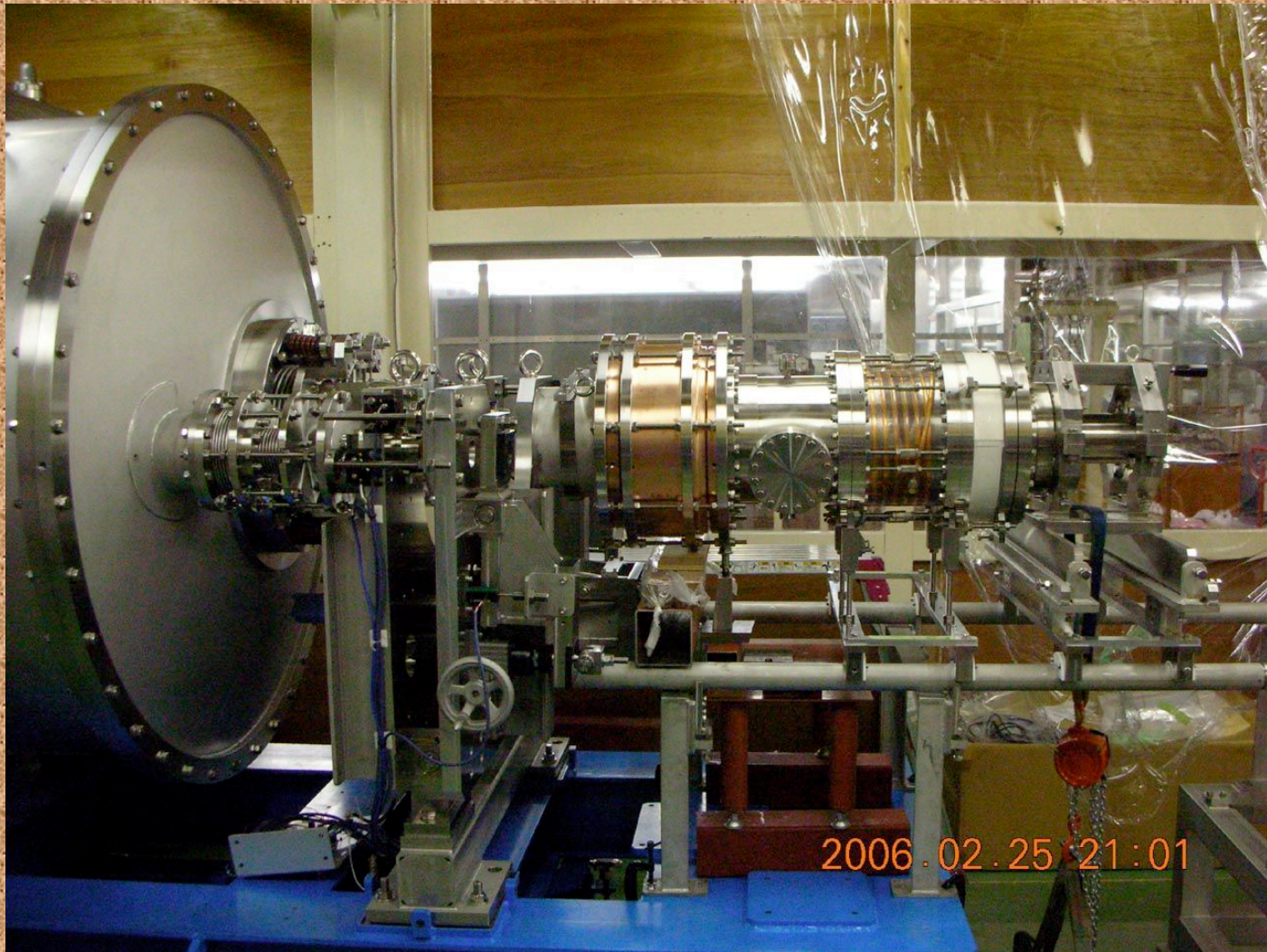


● RF Components

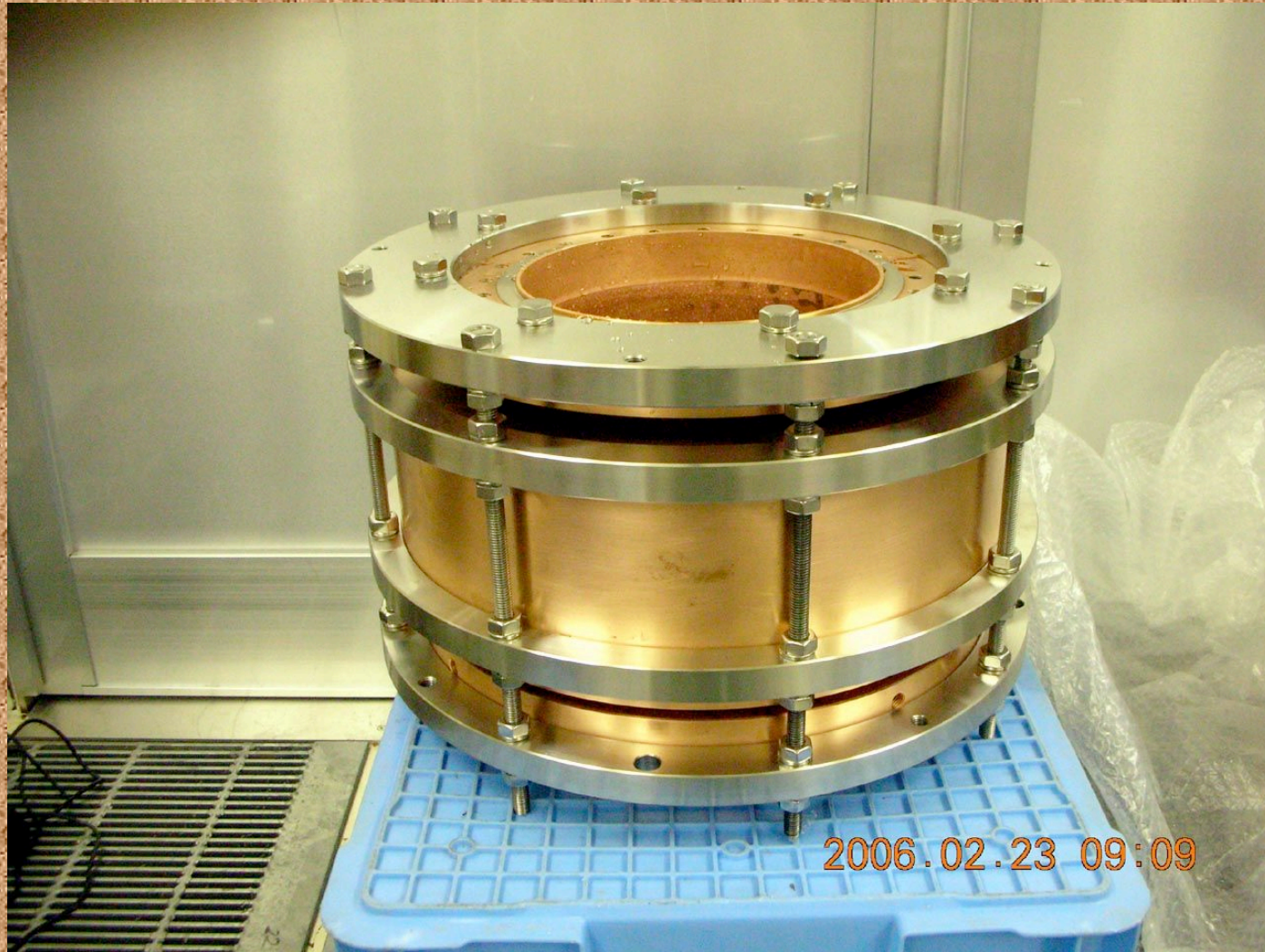
Crab Cavity Assembly



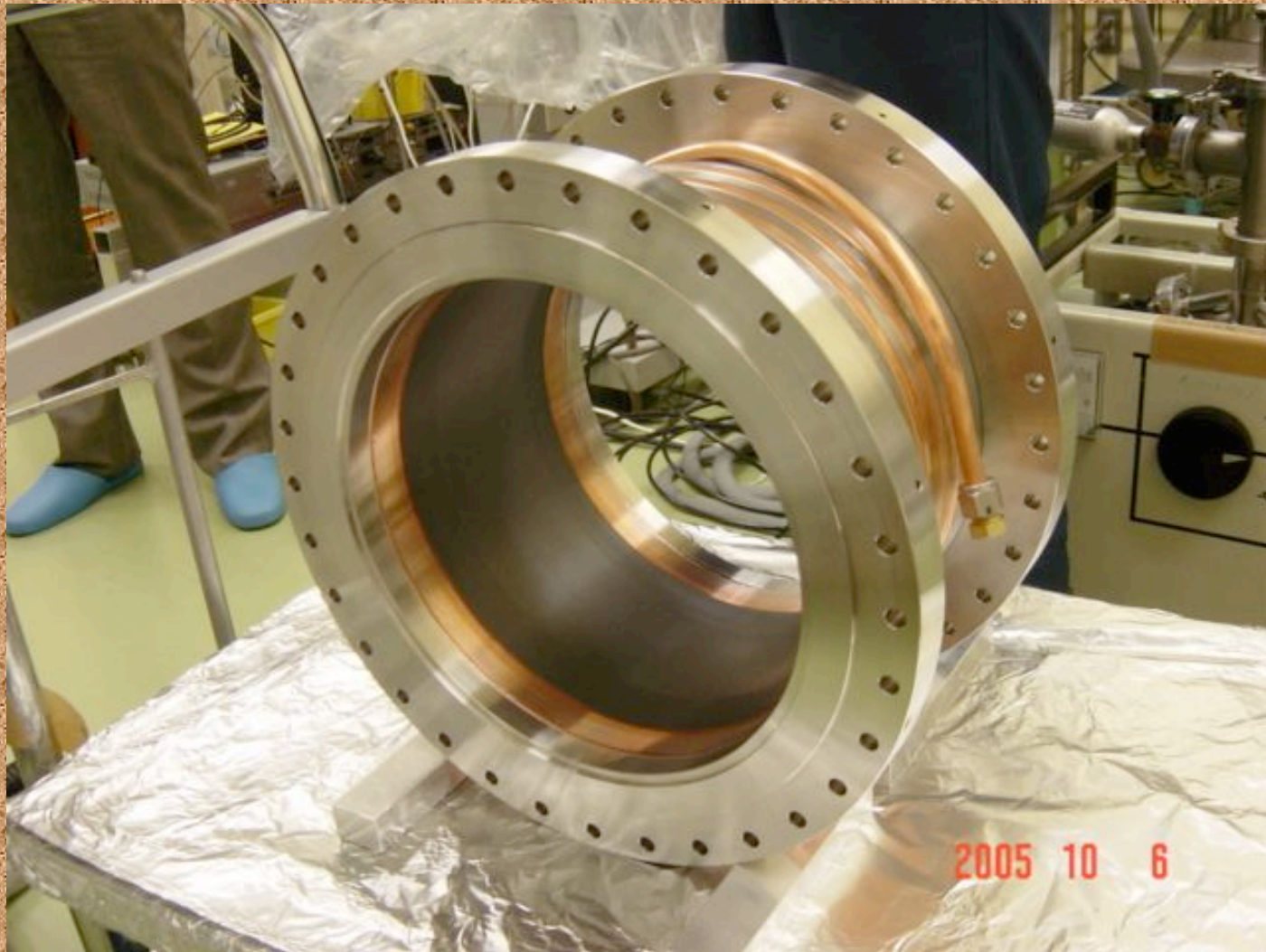
Notch Filter & HOM Absorber



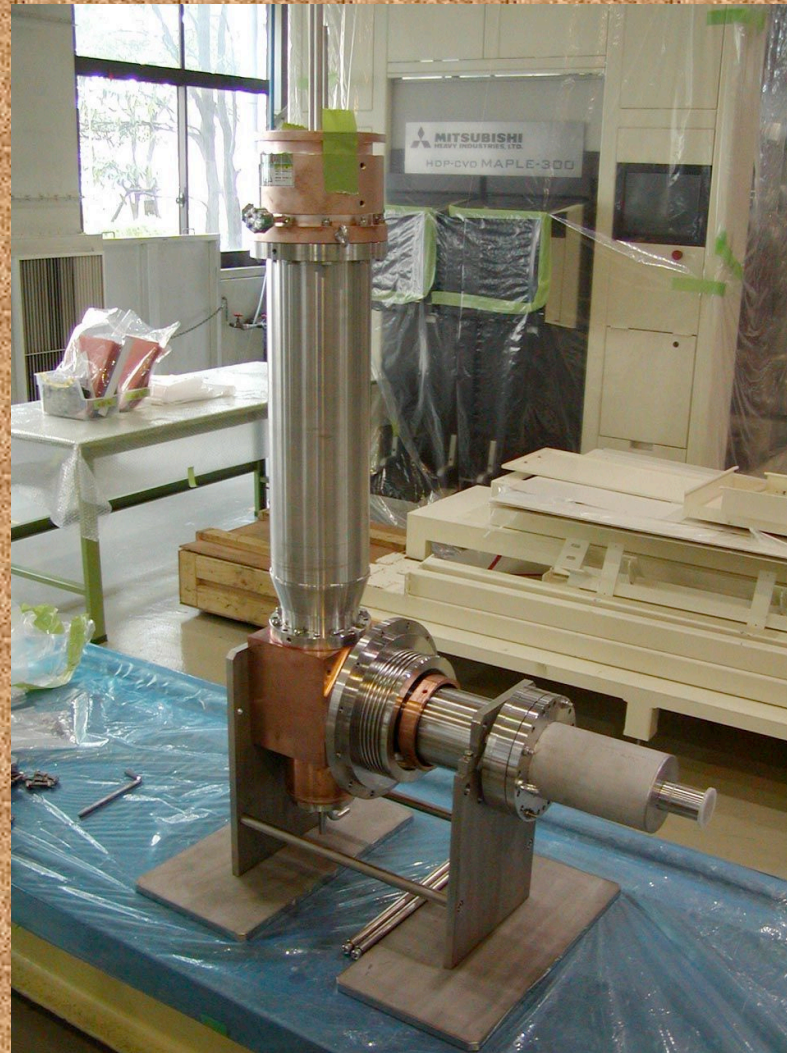
Notch Filter



HOM Absorber



Input Coupler

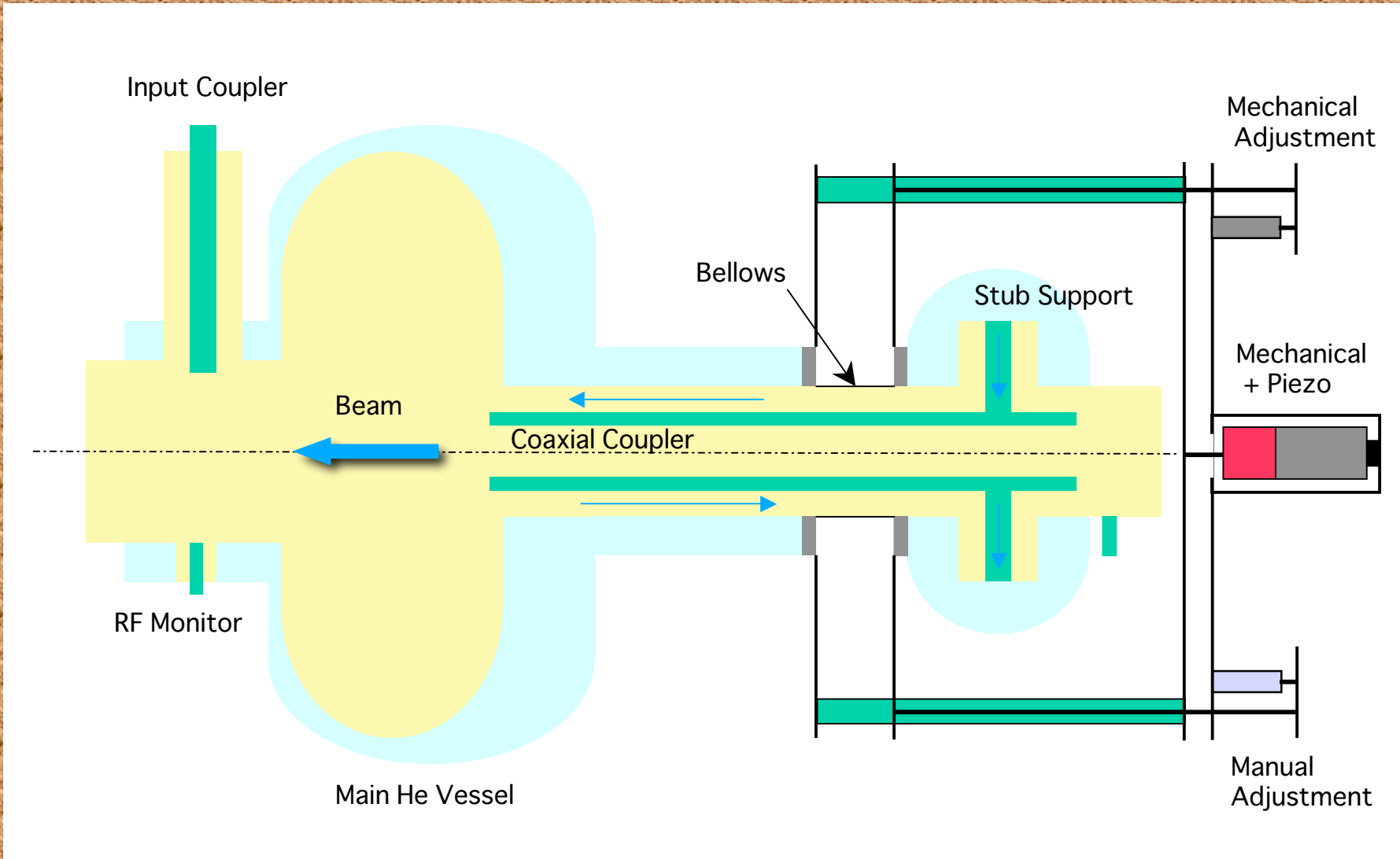


Coaxial Coupler



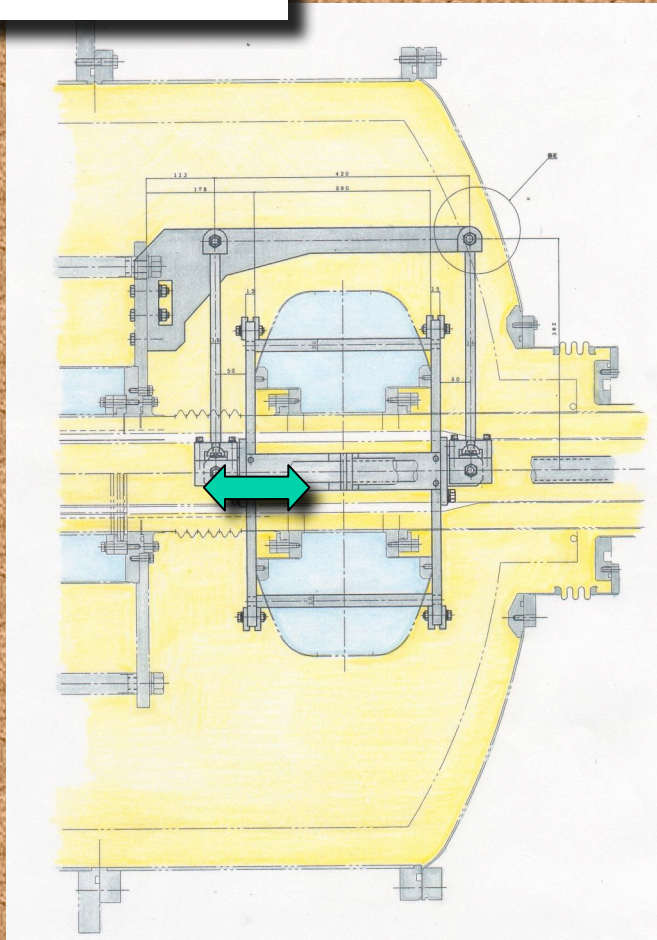
● Frequency Tuner

Frequency Tuner Schematic

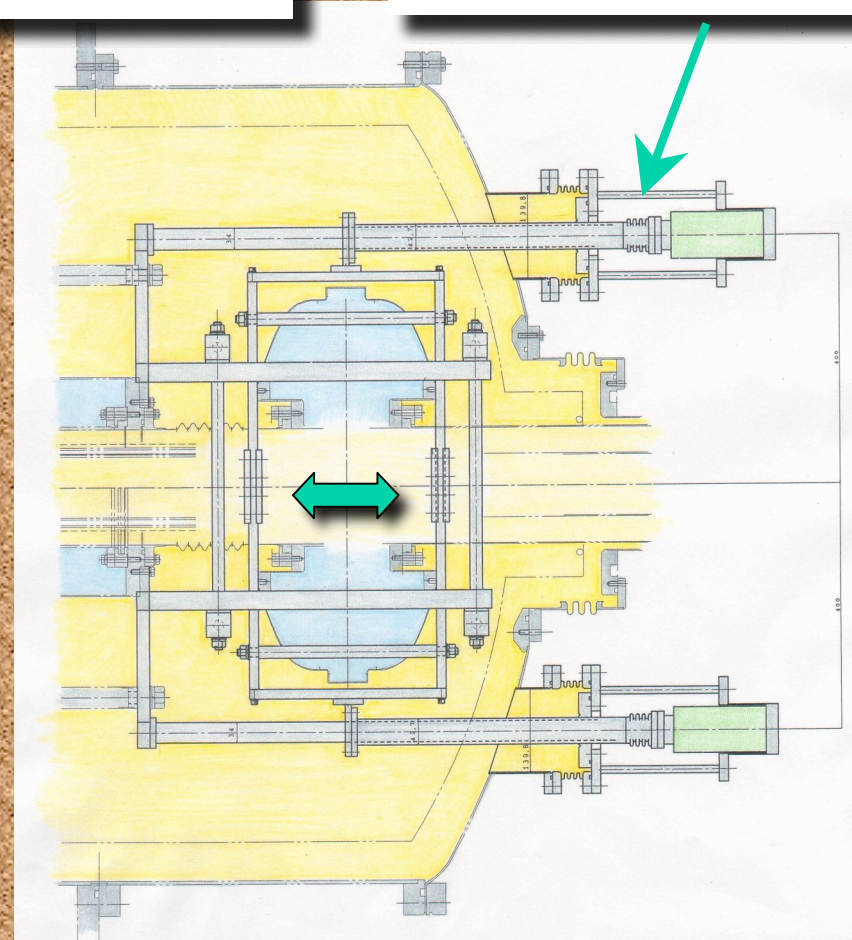


Frequency Tuner

Side View



Top View



Driver
Mechanical + Piezo

Inner Structure of Tuner



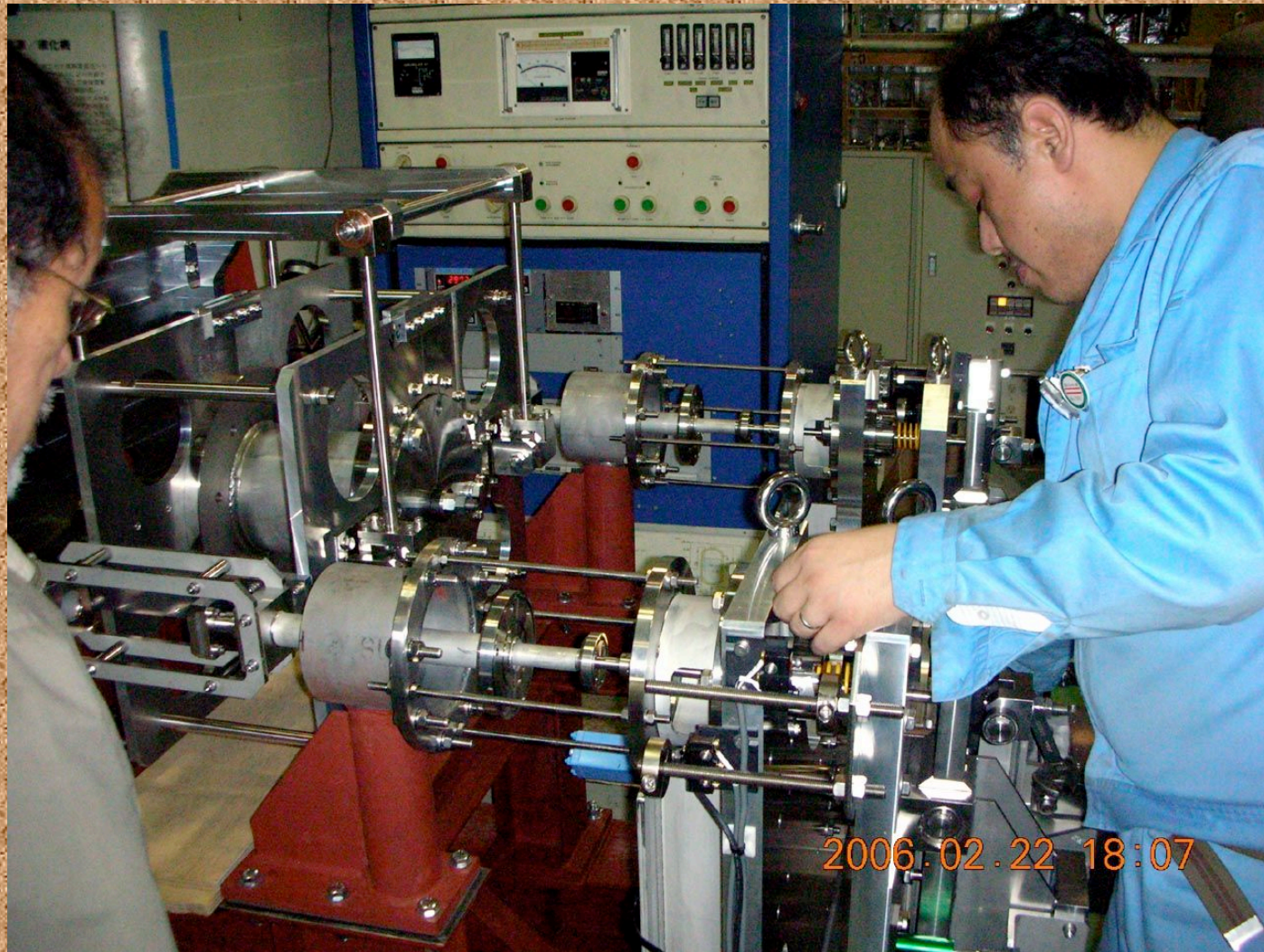
Copper Bellows for Tuning



Outer Structure of Tuner

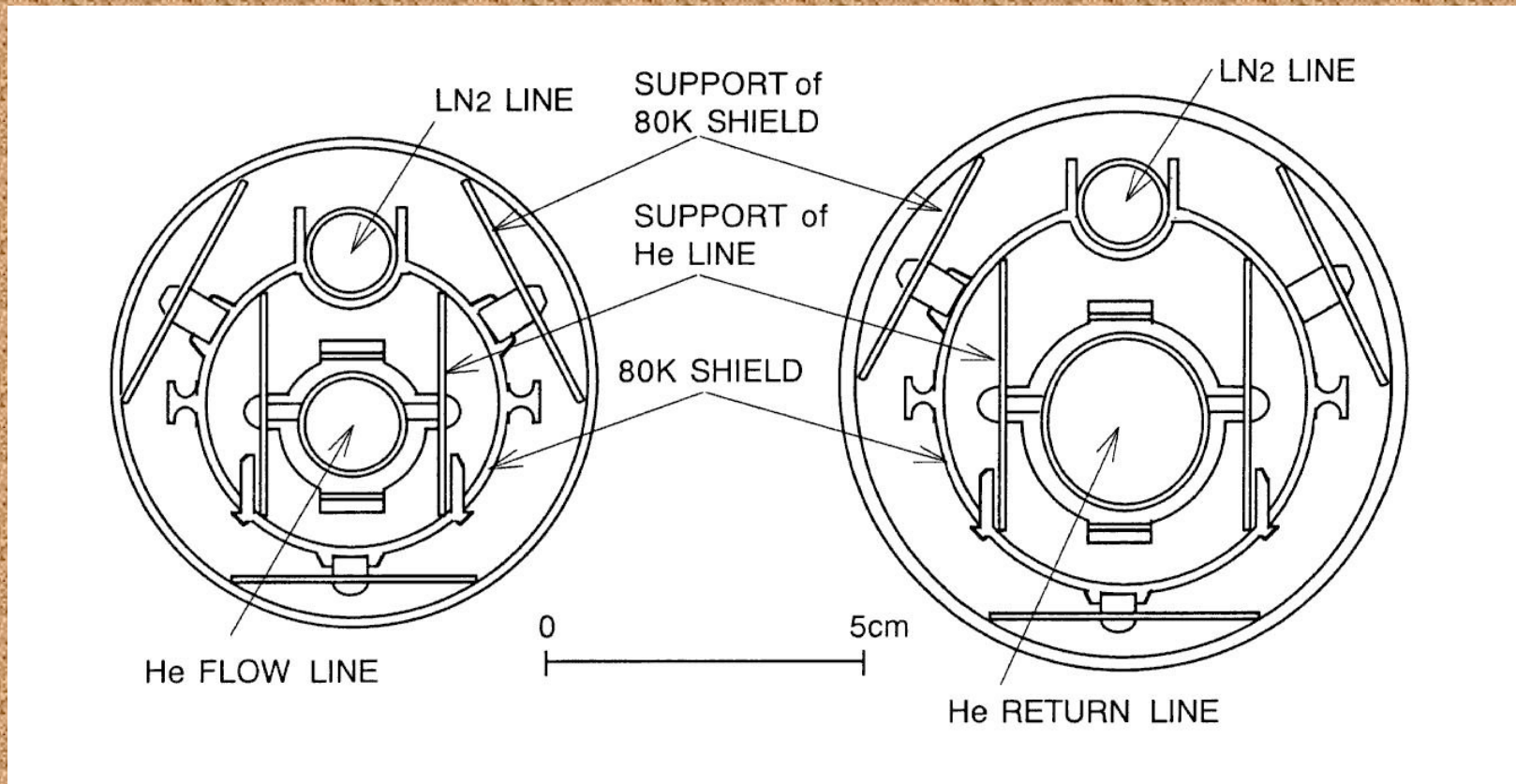


Tuner Test Stand



● Cryogenic Transfer Lines

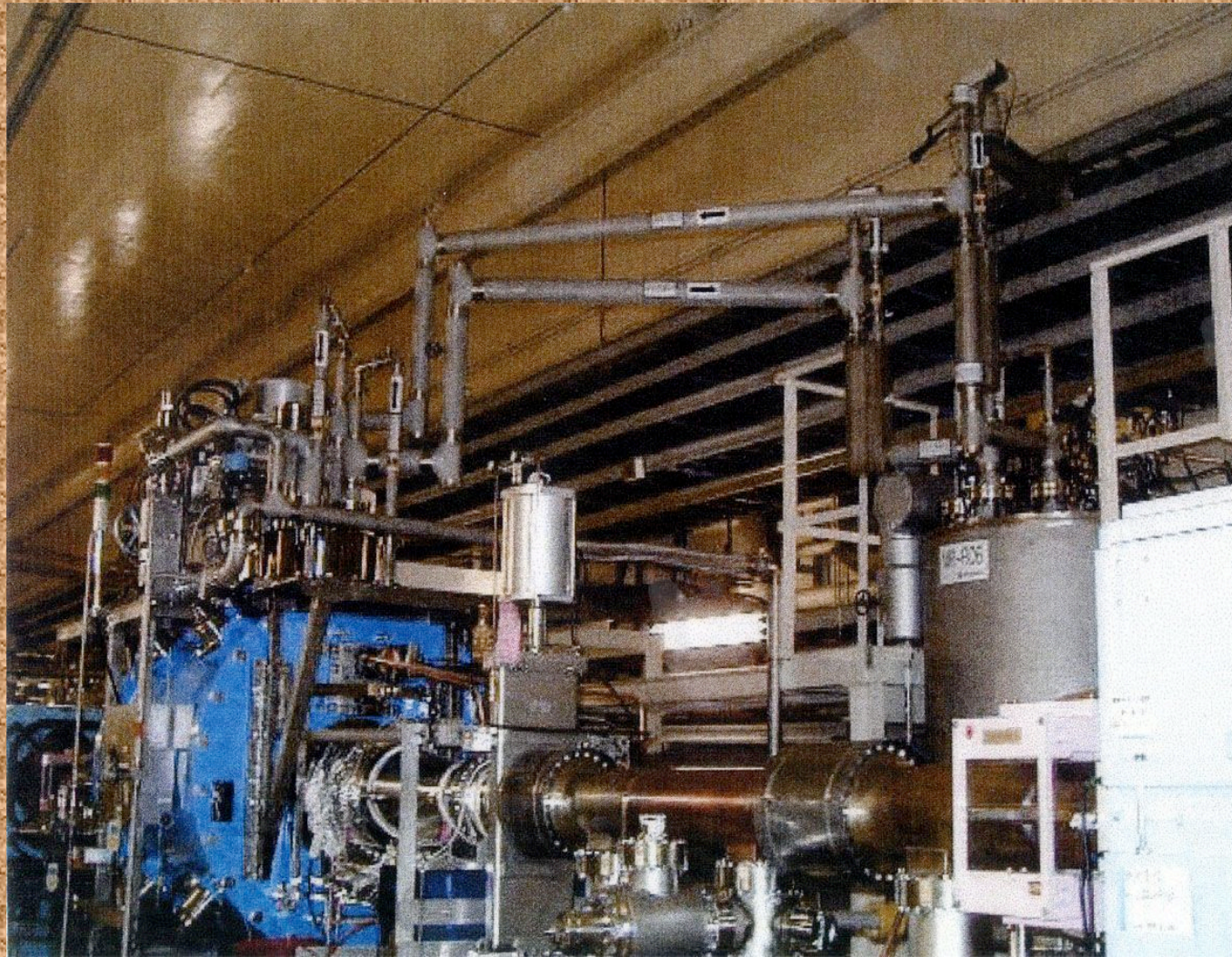
Transfer Line Schematic



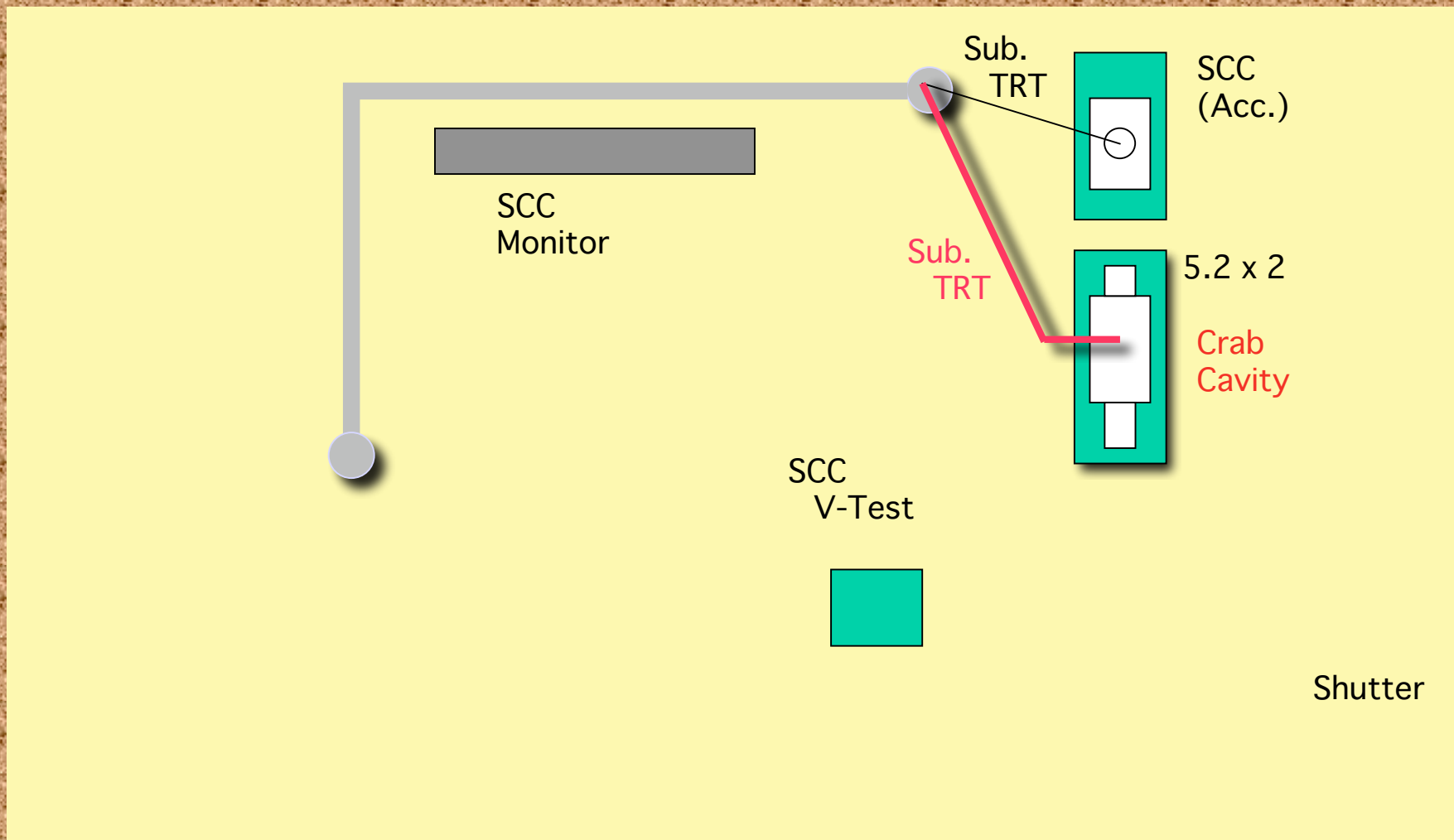
Manufacturing Transfer Line



Transfer Lines in KEKB tunnel



D10 Test Stand Schematic



Transfer Lines at D10 Test Stand



Transfer Lines at D10 Test Stand



Current Status ...

- Vacuum system ready for assembly to cryostat
- RF components already prepared
- Frequency tuner under electrical function test
- Manufacture of cryogenic transfer lines for crab cavities in progress