FNAL meeting report

2009/03/09-10 @FNAL

Shigeru KASHIWAGI, Hitoshi HAYANO, Yoshihisa IWASHITA
Osaka Univ. / KEK / Kyoto Univ.

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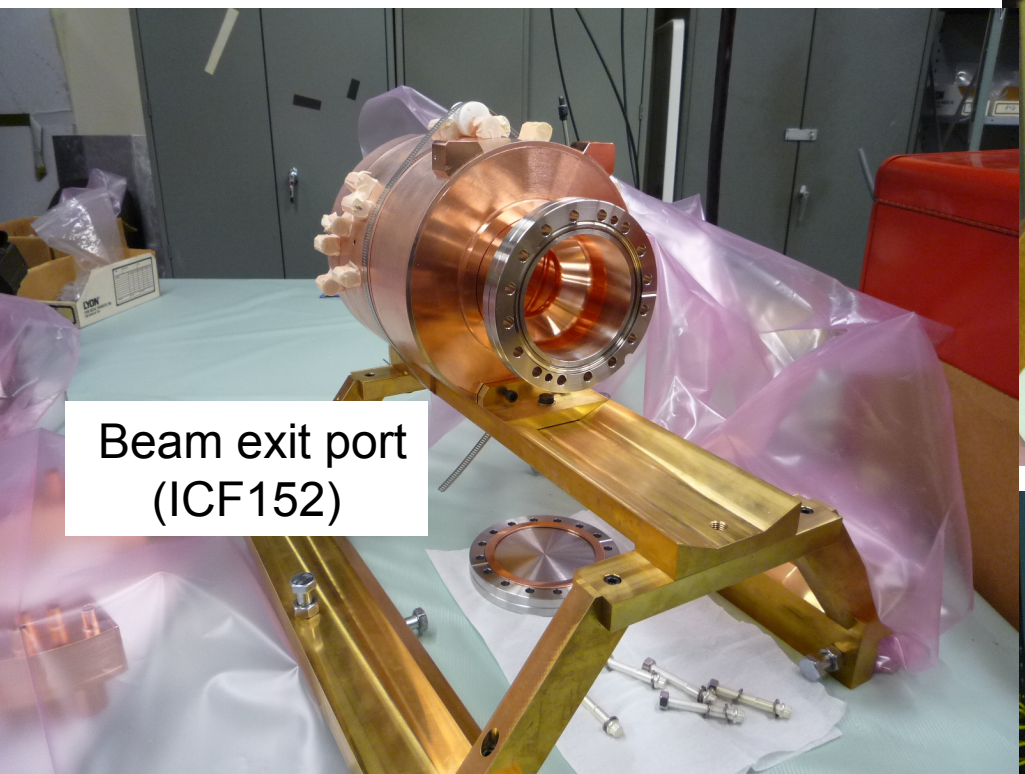
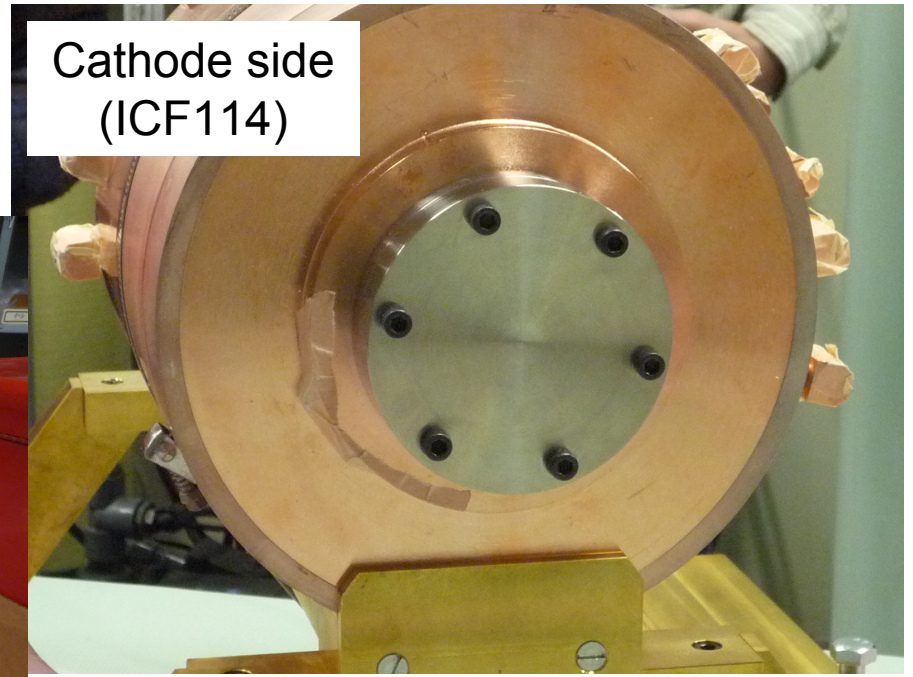
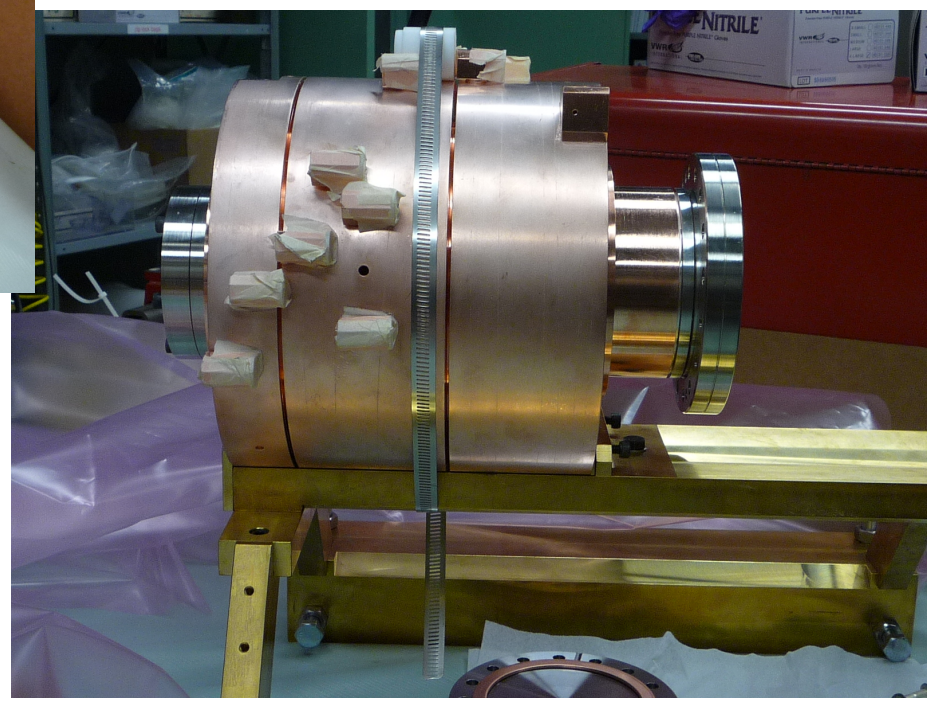
09 March (AM): SC cavity Pre-tuning machine
09 March (PM): SC cavity inspection (Kyoto camera)
10 March (AM): L-band rf gun
10 March (PM) : Hayano; US meeting, Lecture
Iwashita & Kashiwagi; EL film changing
Kashiwagi; discuss about cavity tuning with Sun

Gun cavity

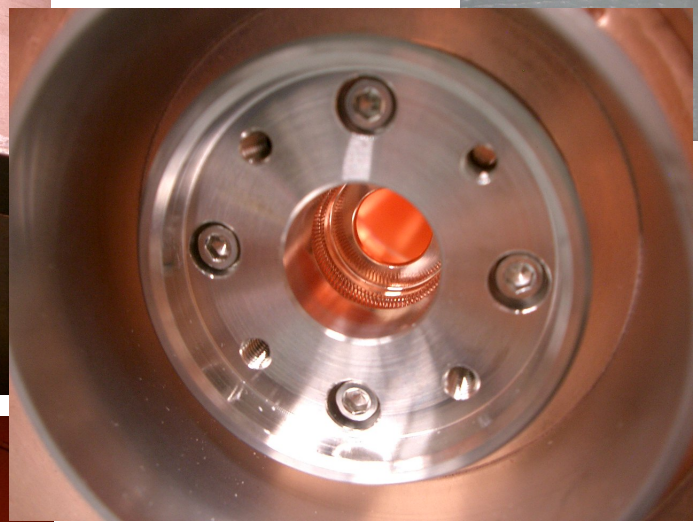


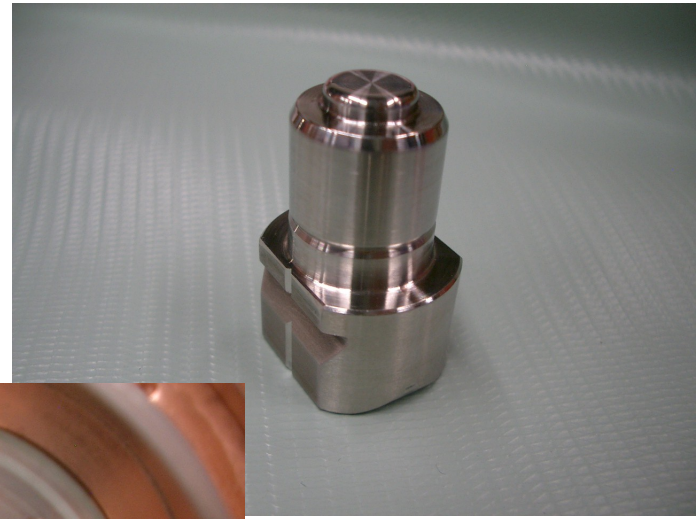


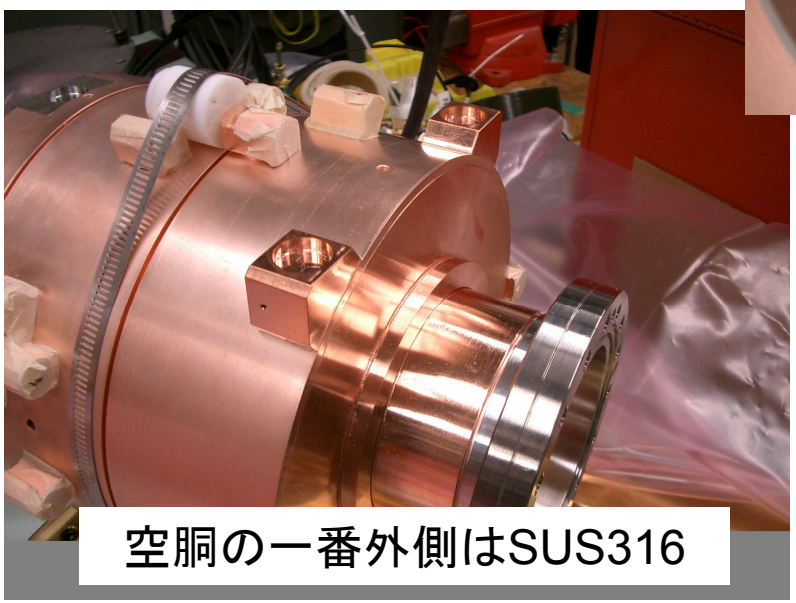


Cavity 2

ターゲット台（リファレンス）

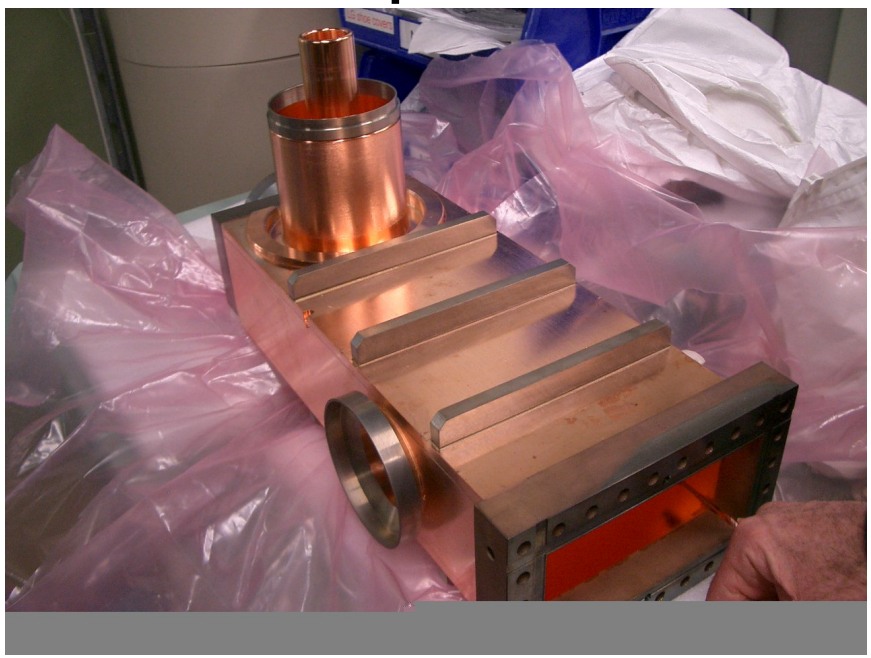


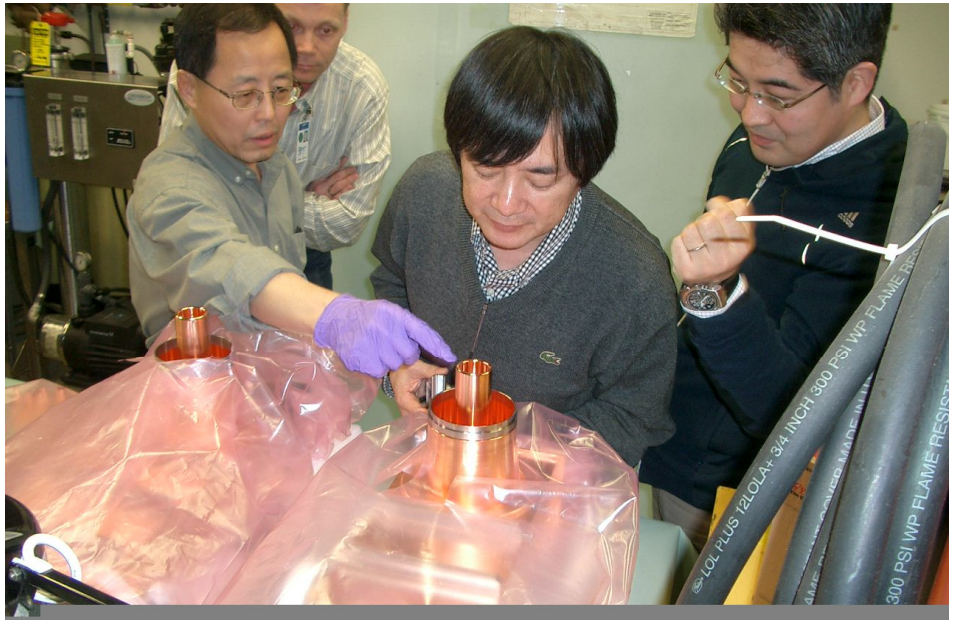




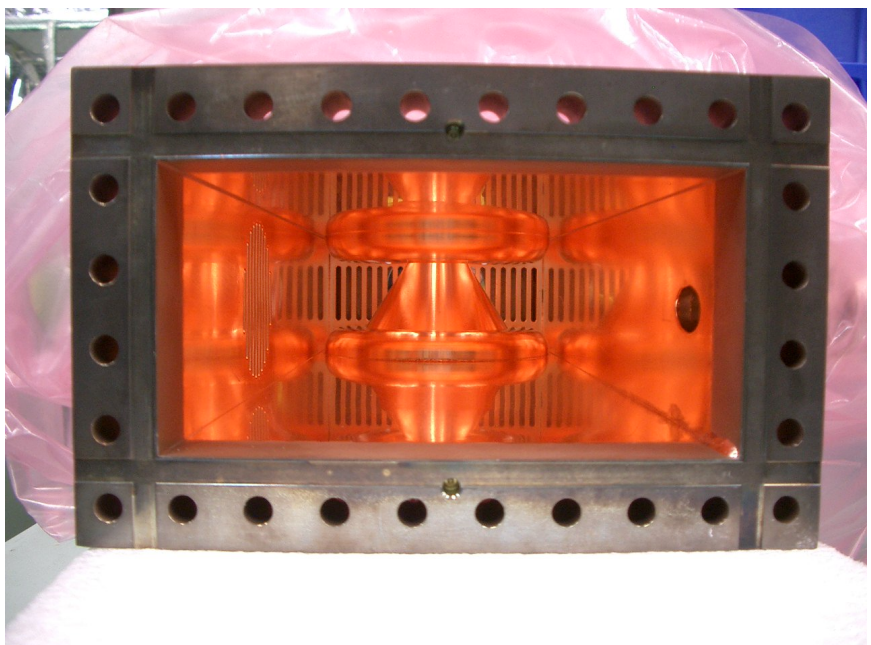
空胴の一番外側はSUS316

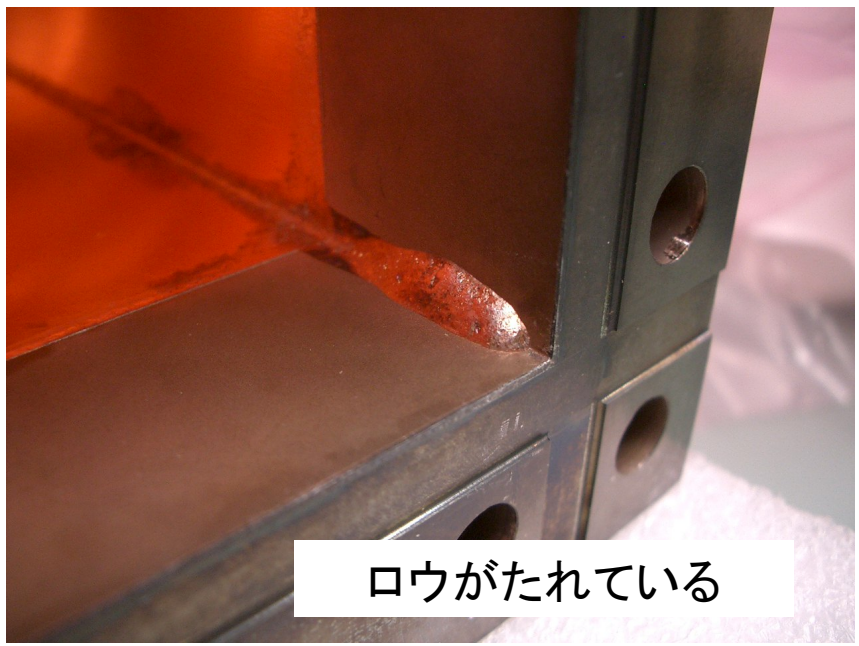
Coupler





2台製作中　うち1台に内導体先端に傷あり





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Tuning Device

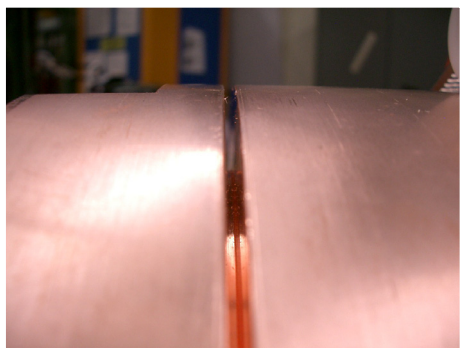
Tuning (push cathode side)

Two cylinders

One Stamp

Push from cathode side in this picture

Note: metal shims in gap



Tuning (push coupler side)

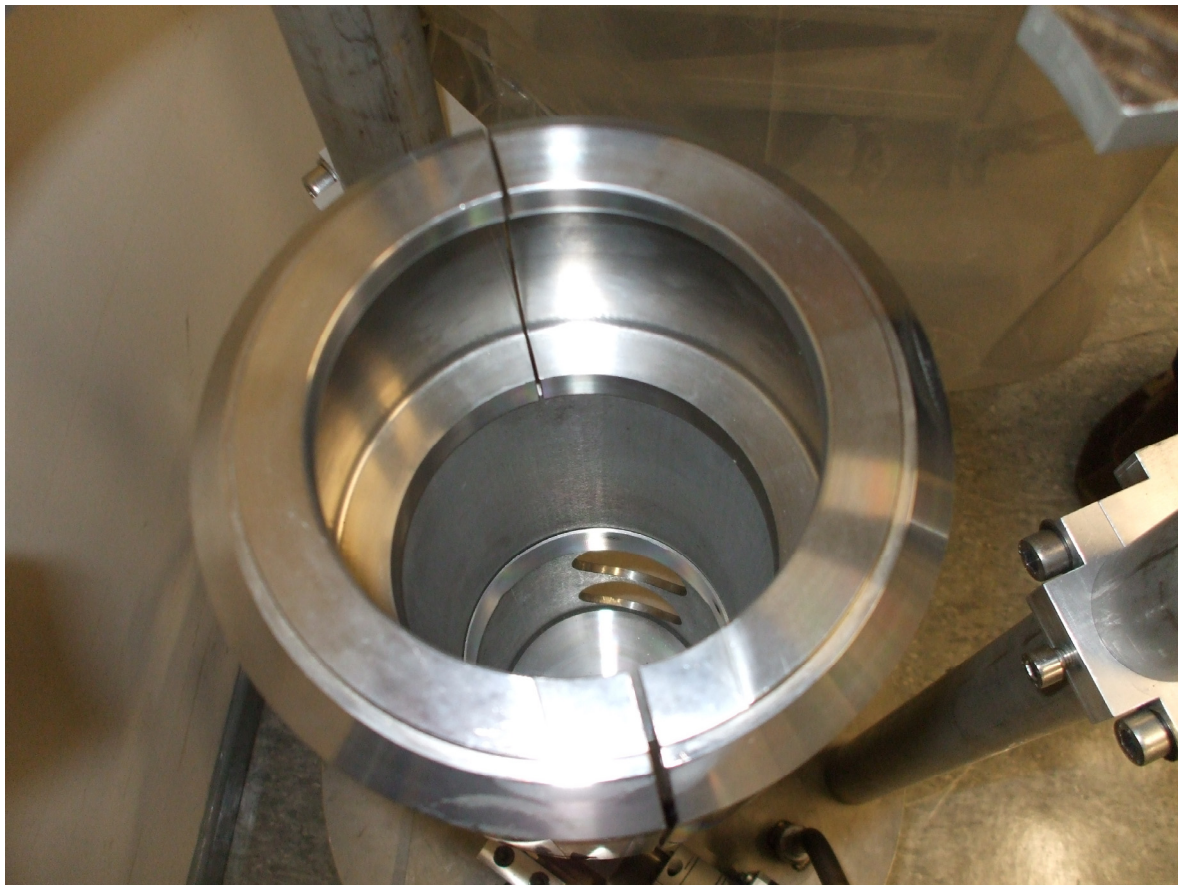
Push from coupler side in this picture

Note: where it is pushed

Tuning (pushing adapter)

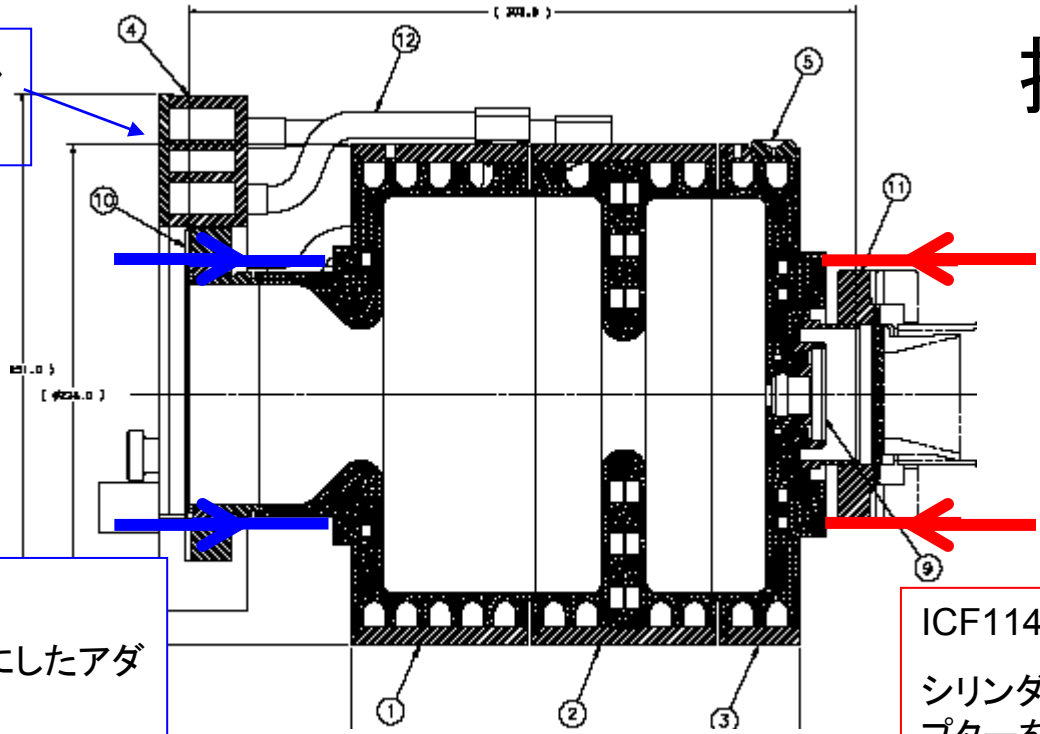
Press stamp:
two parts

If an rf probe is
on side wall,
the stamp may
be modified
by adding an
extra slot



押す位置

この冷却チャンネル
は付いてない



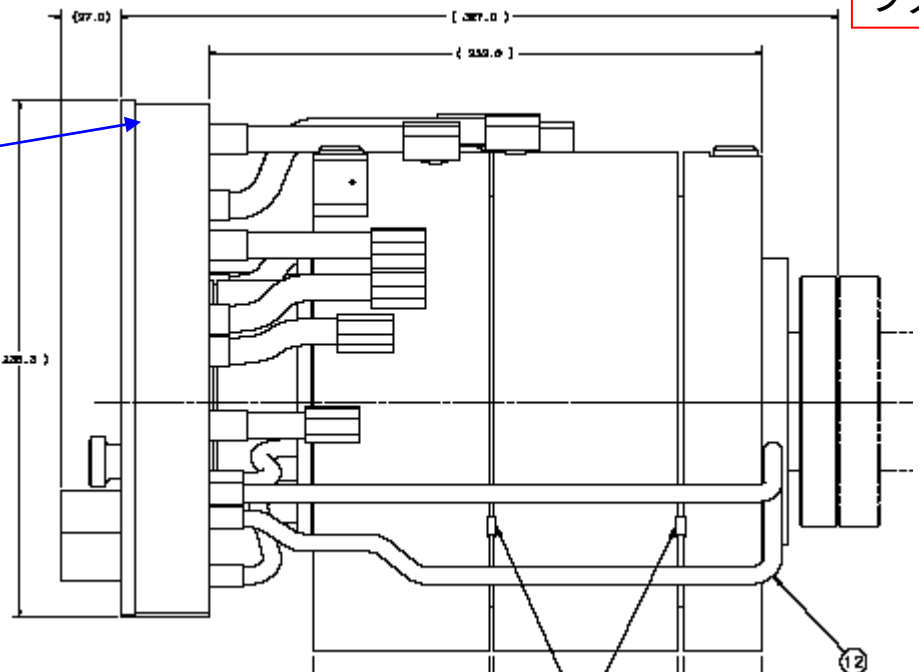
ICF１５２をよけて

シリンダーを半割りにしたアダプターを作る

ICF114ギリギリに押す

シリンダーを半割りにしたアダプターを作る

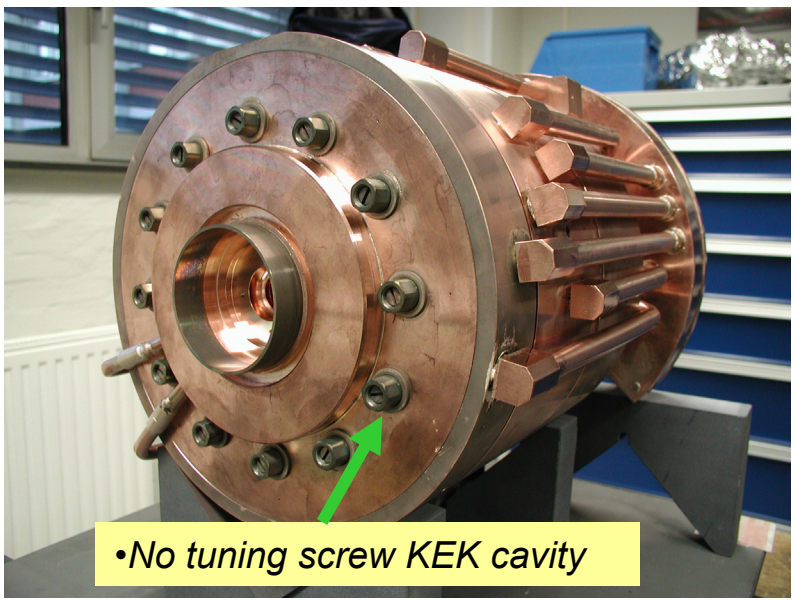
この冷却チャンネル
は付いてない



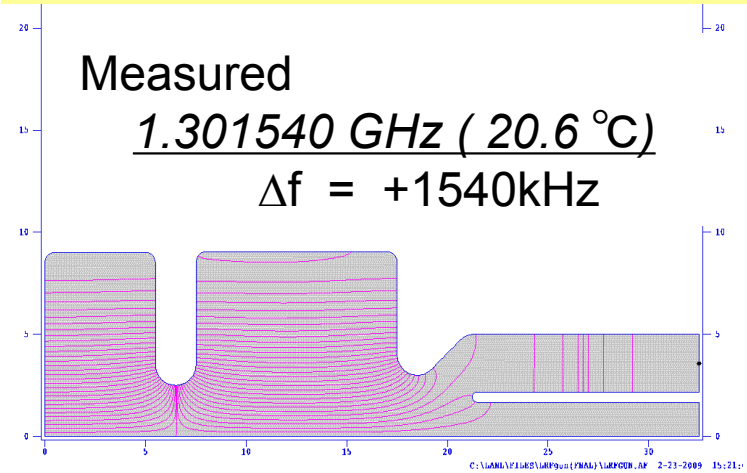
Resonance frequency

from Rich Andrews

Disk aperture: 50mm
Beam exit aperture: 60mm
Half cell length: 55mm
Full cell length: 100mm
Diameter of Cell:
180.74mm (full cell)
180.04mm (half cell).



- *F_0 is higher than 1.3GHz (by ~1.8MHz)*
  agree with Ding Sun calculation (HFSS)
- *Field balance isOK (1.1 : 1.0)*



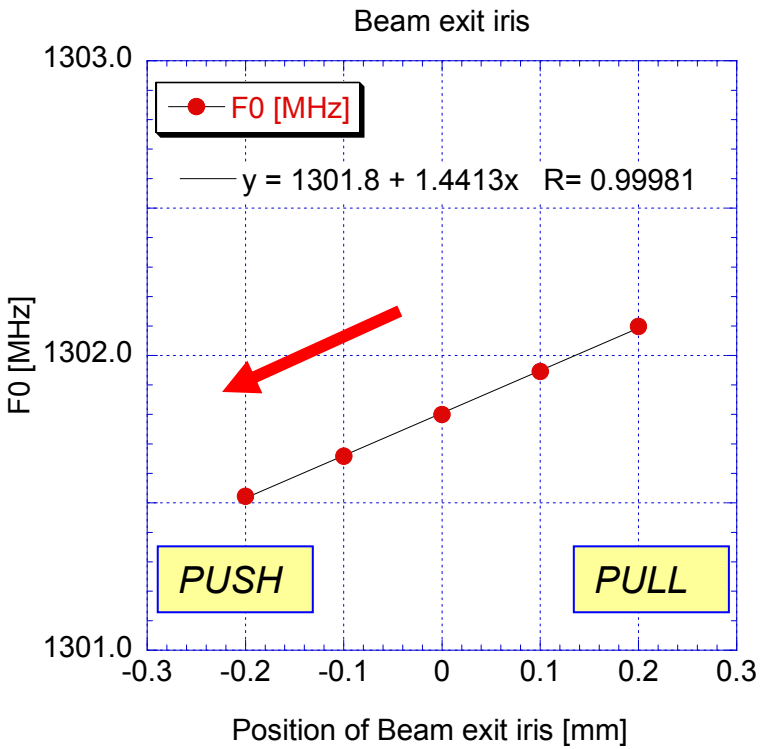
- Floettmann comments
  1. vacuum → +390kHz
  2. cooling water (1K) → -22kHz/K
  3. Final brazing → no change

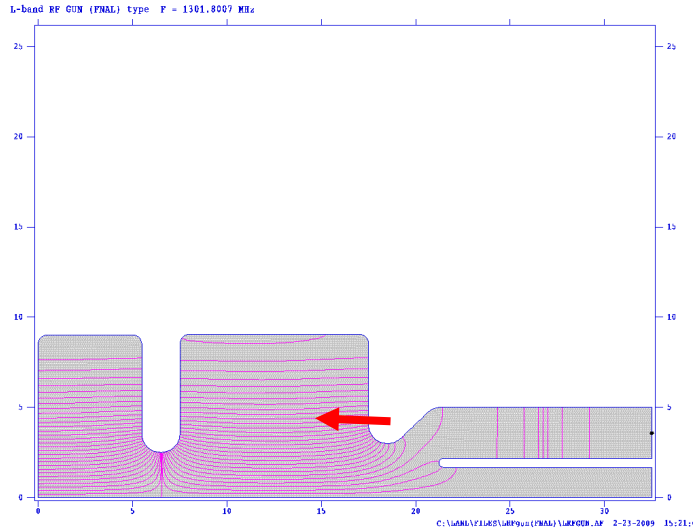
Rf measurement @20℃
Operation @ 60℃ (ΔT=+40℃ ~ -880kHz)

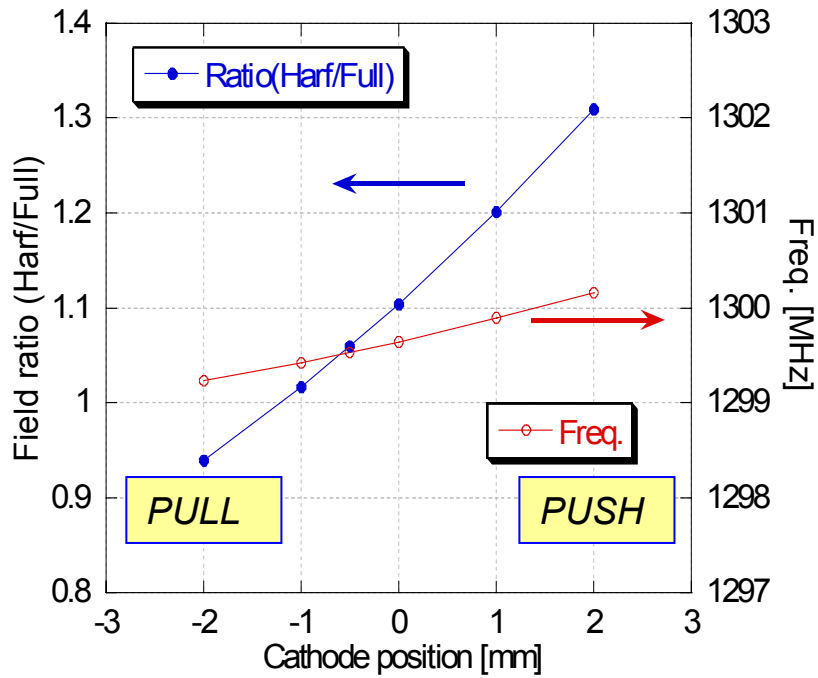
→ Target freq. ~1300.49MHz
→ Δf = -1050 kHz

Ref. CommunicationToShigeru.ppt

Freq. tuning (direction)



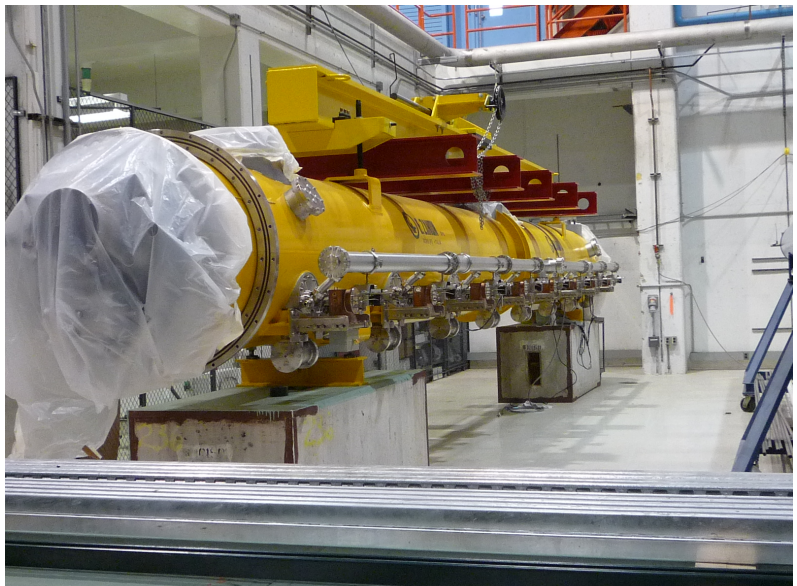


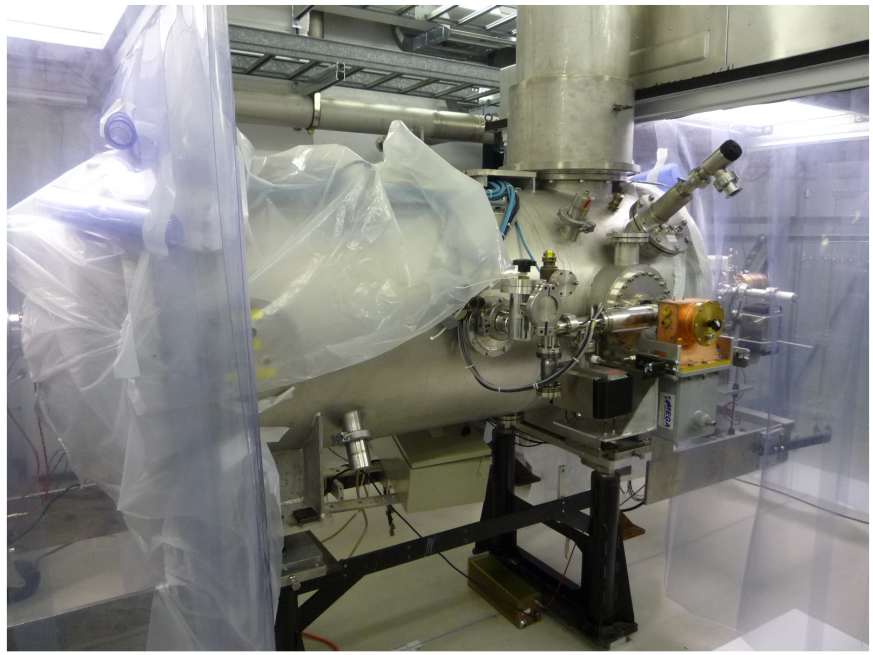


- *We need push the beam exit iris.*
  dL = ~700um

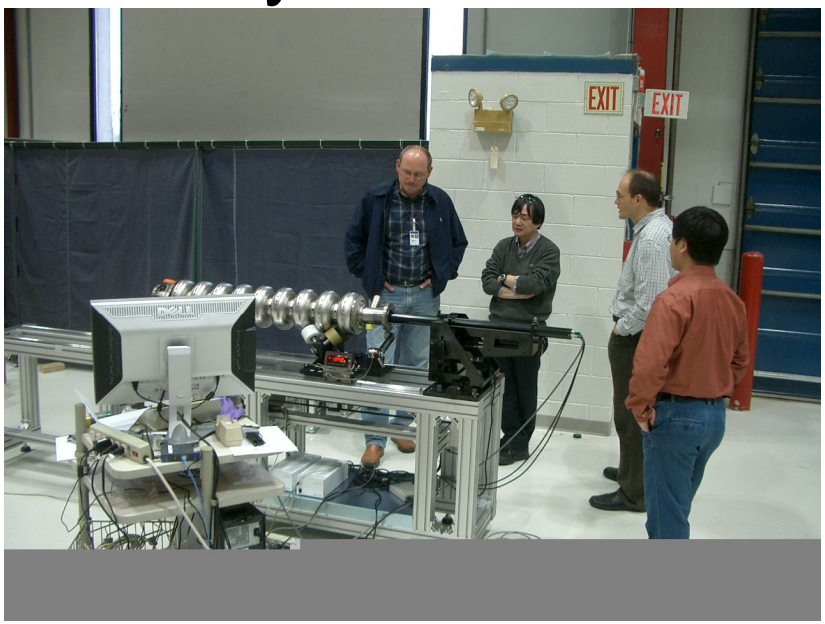
3月末から4月あたまに日本に到着、4月中にFNALへ返送の予定。実質の作業は、4月第2週後半に行う。（第2週前半は準備）

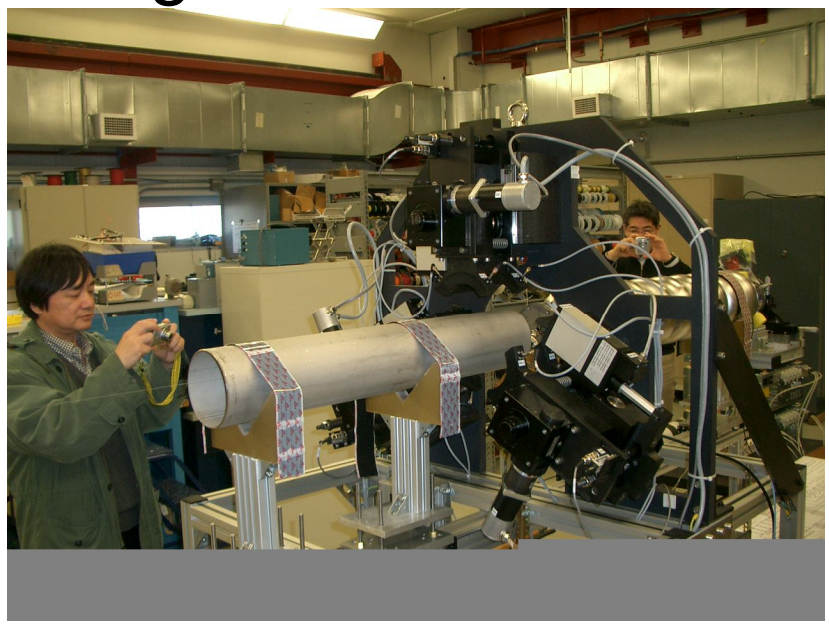
Test Facility





Kyoto camera & Pre-tuning machine





A0 Accelerator (Photo-injector)