

Delivery Records of Septum Magnets

Pioneering New Horizons in Science

TOYAMA

For J-PARC

(Japan Proton Accelerator Research Complex)

— A lot of TOYAMA's products working successfully —

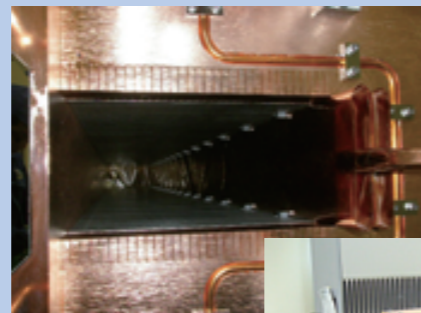
Injection Septum Magnet

Based on the silicon steel laminating technology cultivated in KEK B-factory project

Core



The laminating structure of non-directional silicon steel plates with 0.35mm thickness



◀ Inside of Core

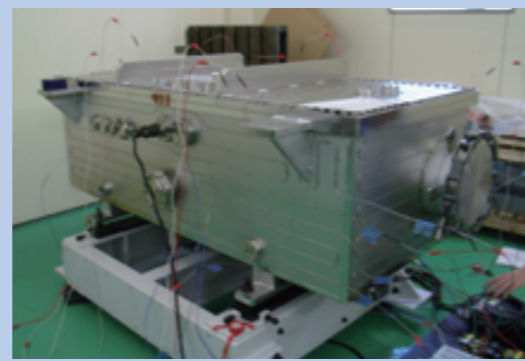


Final Assembly ▶

Chamber

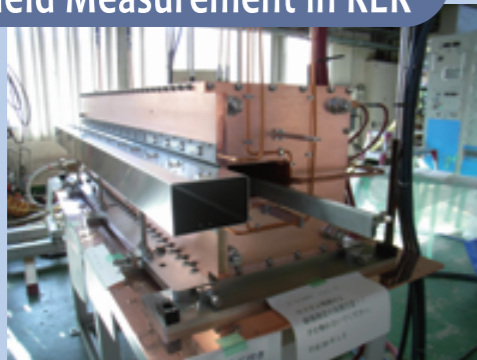


Dimensions : 900mm W x 2000mm L x 600mm H
Tin sheets are used for sealing the rectangular flanges.



▲ Preparation of baking

Magnetic Field Measurement in KEK



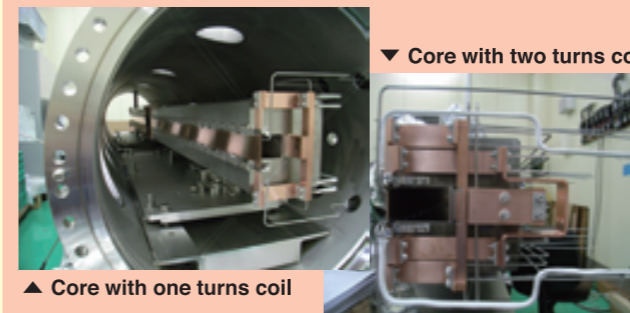
▲ Magnetic Field Measurement with beam pipe

Extraction Septum Magnet

Products of low and middle magnetic field septum magnets with solid core technology

Low Magnetic Field

Core

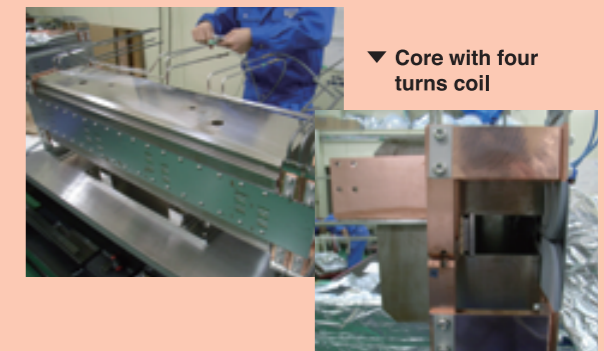


▲ Core with one turns coil

- "Centipede" shaped coil with copper plate of 1.5mm thickness
- Manufacturing a core with one turn coil and a core with two turn coil
- Both are water cooled
- Dimensions of each core : 200mm W x 1500mm L x 218mm H

Middle Magnetic Field

Core



▼ Core with four turns coil

- Coil made of HIP materials
- Four cores with 4 turns coil
- Water cooled
- Dimensions of each core : 280mm W x 840mm L x 234mm H

Chamber

Each core is mounted in each chamber ▶



- Helicoflexes are used for sealing the large diameter flanges
- Dimensions : 660mm ϕ x 4000mm L

Chamber

A pair of core is mounted in each chamber ▶

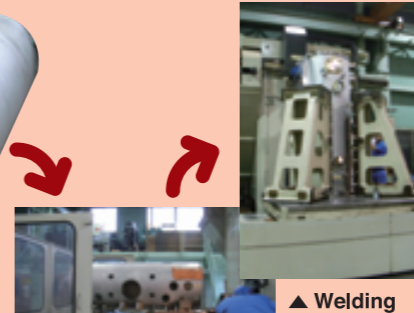


- Helicoflexes are used for sealing the large diameter flanges
- Dimensions : 660mm ϕ x 4000mm L

Process of manufacturing Chamber



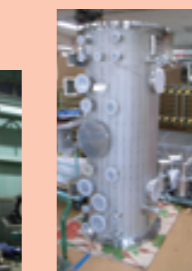
▲ Pipe rolling



▲ Machining



▲ Welding sheath heater



◀ Baking



▲ Packing

◀ Delivery