

Assembling an Isotech Cell

- ❑ This example is for a large Silver Cell
- ❑ The Principle is the same for other cells

Disclaimer

This information is for guidance only. Other laboratories successfully use other assembly techniques

Some of the apparatus shown is not available commercially



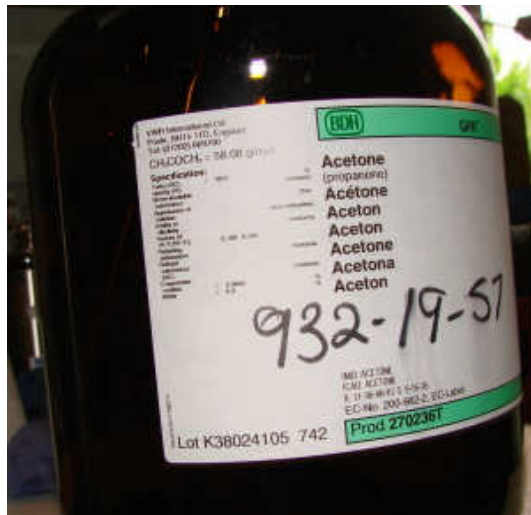
Stage 1

- Preparation
 - Have all the items to hand in a clean area



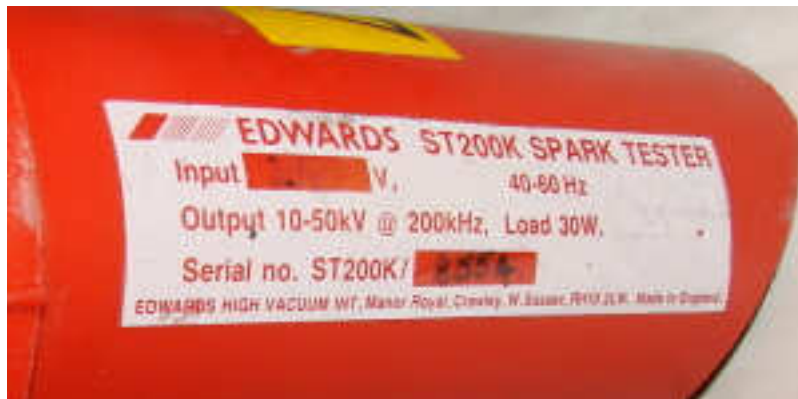
Stage 1

- ❑ Check List
 - The cell, its basket and the insulators and reflectors
 - **Powder Free** Gloves
 - Acetone
 - Clean Tissues



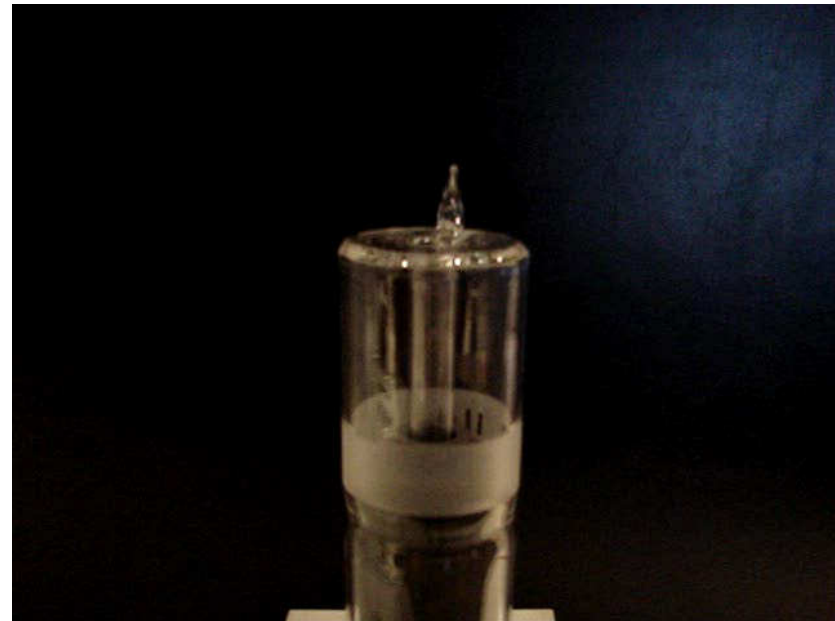
Stage 2

- Check the Cell is sealed
 - Ideally with a spark test



Stage 2

- Check the Cell is sealed
 - Quartz Cells -
Ideally with a spark test
 - Look for spark
 - Metal Clad Cells can
be checked in hot water
 - Look for bubbles



Stage 3

- Prepare the Cell
- Must be clean
- An Initial Wipe With Acetone on Tissue



Stage 3

- Then repeat
 - Liberal Amount of Acetone
 - Ensure that now there is NO CONTACT between the gloves and the cell
 - *The cell is held in the tissue not directly in the gloves*



Stage 3

- Now Dry The Cell with Tissue
 - A simple stand to hold the cell is very useful
 - It too must be cleaned before the cell is placed in it



Stage 4

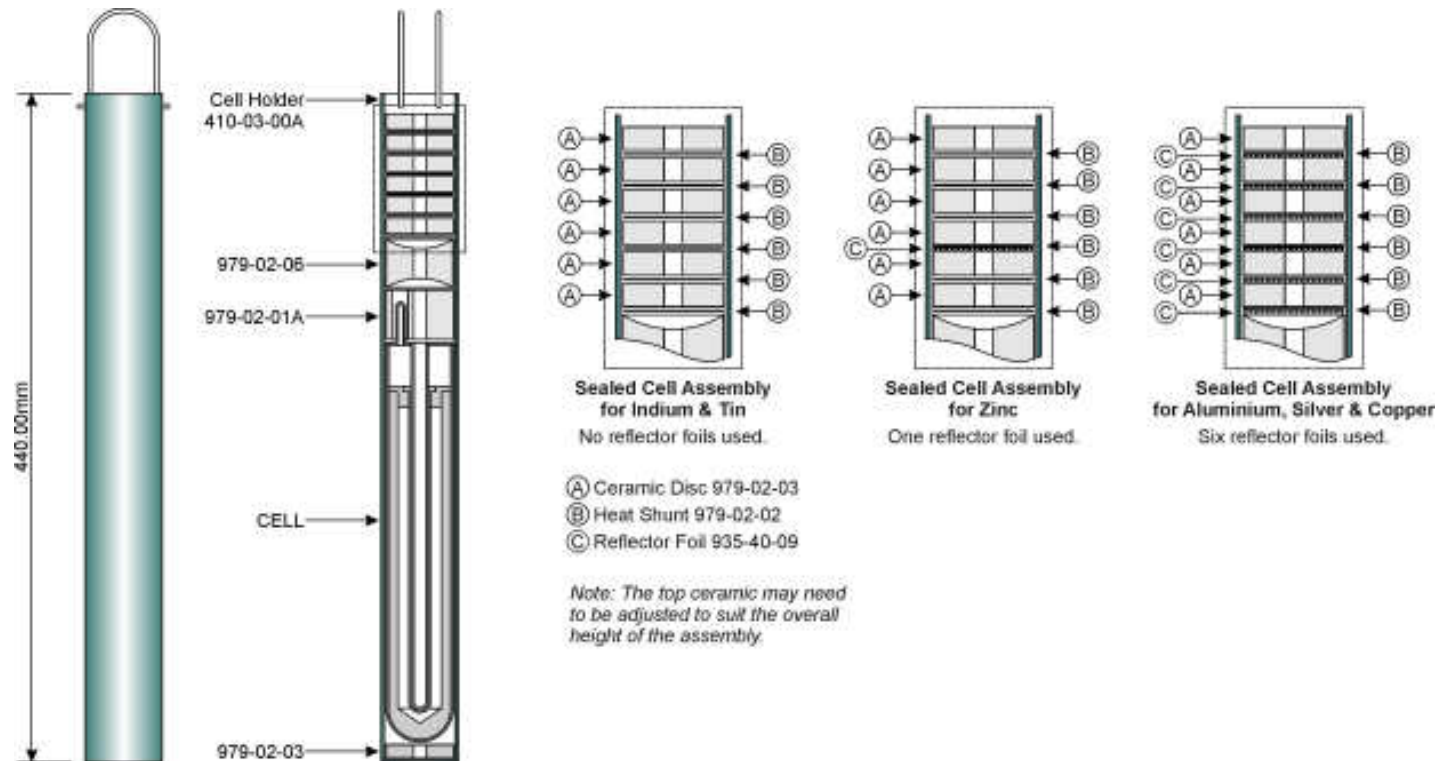
□ Assembling the Cell

- Prior to assembly the basket and all the parts need to be fired in the furnace
- Leave the parts in the furnace for a few hours at a temperature higher than the cell will be used at
- This will out gas the parts and help prevent devitrification



Stage 4

- Assembling the Cell
 - Refer to the assembly drawing for details to suit a particular cell



Cell Assembly : Slide:10

Stage 4

- Place the Lower Ceramic into the basket



Stage 4

- ❑ Place the Lower Ceramic into the basket
- ❑ It will readily slide down the cell basket



Stage 4

- Place the Lower Ceramic into the basket
 - Check it is located by viewing from the hole in the bottom of the cell basket



Stage 4

- Now lie the basket down



Stage 4

- Hold the cell in tissue
- **VERY SLOWLY**
move the cell to the
horizontal position



Stage 4

- ❑ Now carefully slide the cell into the basket
- ❑ Immerse until the top of the cell is 10mm into the basket



Stage 4

- Now add the ceramic insulators
 - Gently push them in moving the cell down the tube



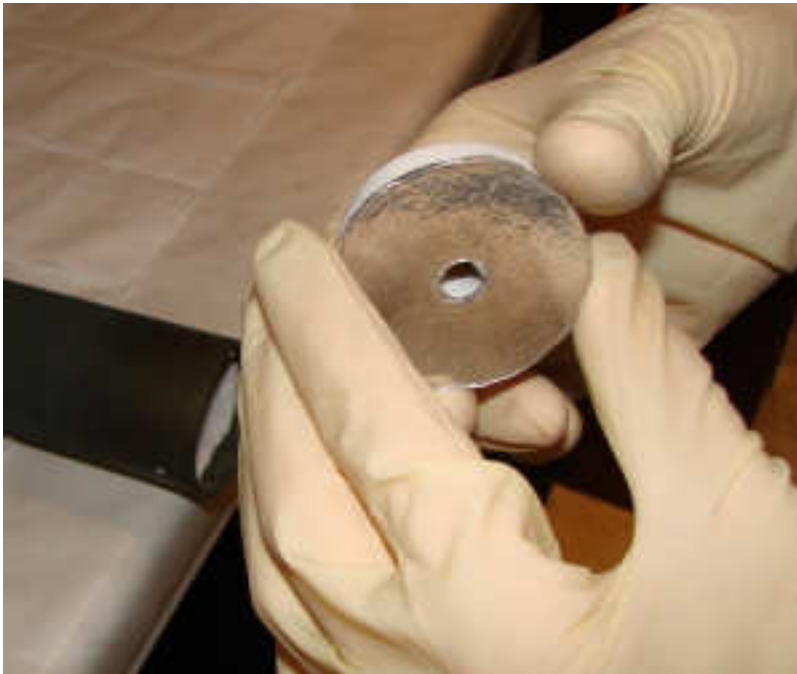
Stage 4

- Now add the ceramic insulators



Stage 4

- Now add the ceramic insulators
 - Keep Adding the pieces in turn



Stage 4

- Continue until the last pair of metal heat shunt and thinner ceramic insulators are added



Stage 4

- ❑ Place a finger into the opening at the lower end of the cell basket
- ❑ Check all is flat and aligned



Stage 4

- Now push the top insulator down until the cell reaches the bottom of the basket and you feel the cell reach the bottom



Stage 4

- Add the top insulators to reach to a few mm below the holes in the basket
 - You may not need all of the insulators



Stage 4

- Slowly raise the basket to vertical
 - Click to play movie
 - Notice the finger at the bottom of the basket to check all is OK



Stage 4

- Finally Add the Handle
 - Remove handle after placing in a prepared furnace

