

		MANUAL In-situation Battery Cell		Docu Code: PDC-MM13
Date: Sep 9, 2021	Product Code: ISBC-PAN-H102	Prepared by: G.A KANG	Approved by: JAKE CHOI	Version: 06

Instruction Manual for ISBC

(ISBC : In-Situation Battery Cell)

In-Situation Battery Cell for XRD

Model : CELL ASS'Y

Revisions :

Revision	Date	Initials	Comments
1	Sep 15, 2015	G.A KANG	First Draft
2	Sep 20, 2015	G.A KANG	Add Measurement
3	Dec 12, 2016	G.A KANG	Update cell design
4	Oct 12, 2017	G.A KANG	Add caution
5	Aug 31, 2020	G.A KANG	Update cell design
6	Sep 9, 2021	G.A KANG	Update stage & cell design

References :

Ref No.	Documents ID	Initials

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1. Installation

1.1 MPSS Installation to goniometer

Before installing, please check the stage change procedure of the XRD equipment.

- 1 Loosen the bolts on the attached stage and remove it.
- 2 Mount the MPSS or Modular Stage.
- 3 Tighten the bolts.

1.2 Battery Cell Assembly

Caution :

The work procedure involves direct handling of beryllium(Be).
 Make sure of the following precautions to ensure safety.

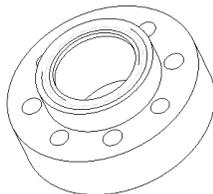
- Never handle Be with bare hands.
- Never contact with skins.
- Wear poly-gloves when handling Be
- Dispose of the gloves after handling Be.
- Handle Be carefully. Breaking the Be, the powder will be hazardous.

The work procedure is critical to a moisture environment.
 Must do work in the dry room or glove box.

Parts name :



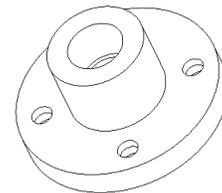
“top cell”



“insulator”



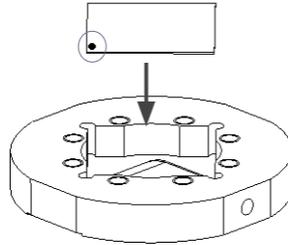
“electrode”



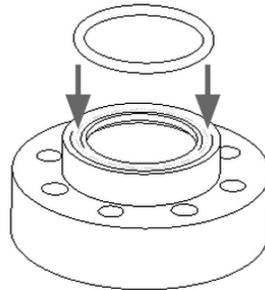
“pusher”

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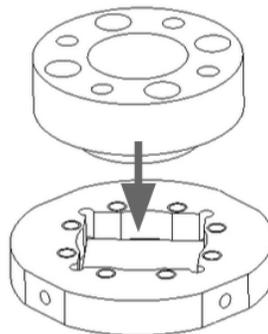
- 1 Install the Be windows(model : CS-BC300) in the “top cell”.
 Anti-corrosion coating side(Marked with black dot to the edge) is applied to the o-ring contacting surface.



- 2 Mount the o-ring(CS-S019) on the “insulator”.
 (The o-ring is disposable)

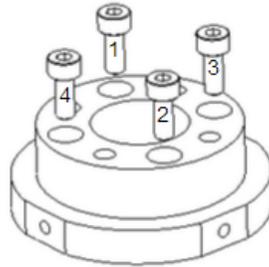


- 3 Mount the “insulator” on the “top cell”.

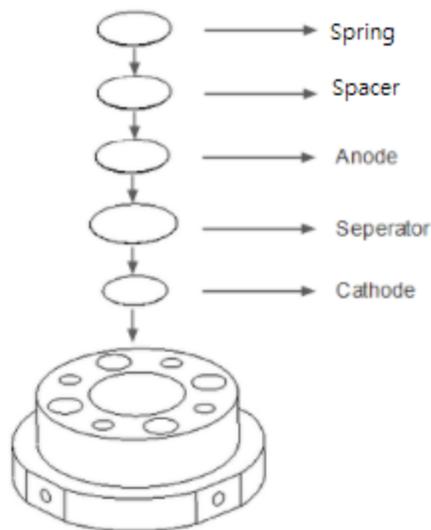


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- 4** Tighten the bolts (rench M4x8L).
Tighten in numerical order. Do not tighten each bolt at once.



- 5** Insert “Cathode”, “Separator” and “Anode” one by one.
Align the center and pour the electrolyte 40~80ul with pipette.



Caution :

The thickness of anode (normally Li Metal) must be between 250um and 350um. I recommend the **300um** thickness of anode. If you use another, the ISBC cell can be damaged or the battery cell doesn't work.

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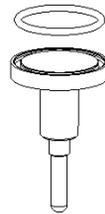
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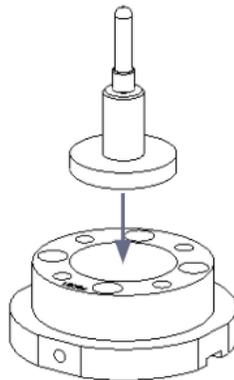
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- 6** Mount the o-ring(CS-S019) on the “electrode”.
(The o-ring is disposable)



- 7** Insert “electrode”.



- 8** Insert “pusher”.

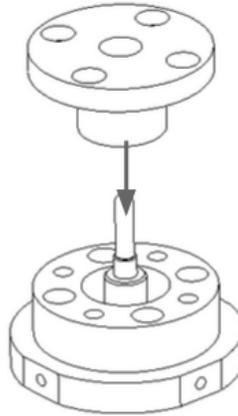
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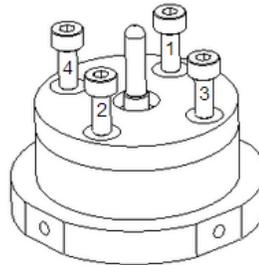
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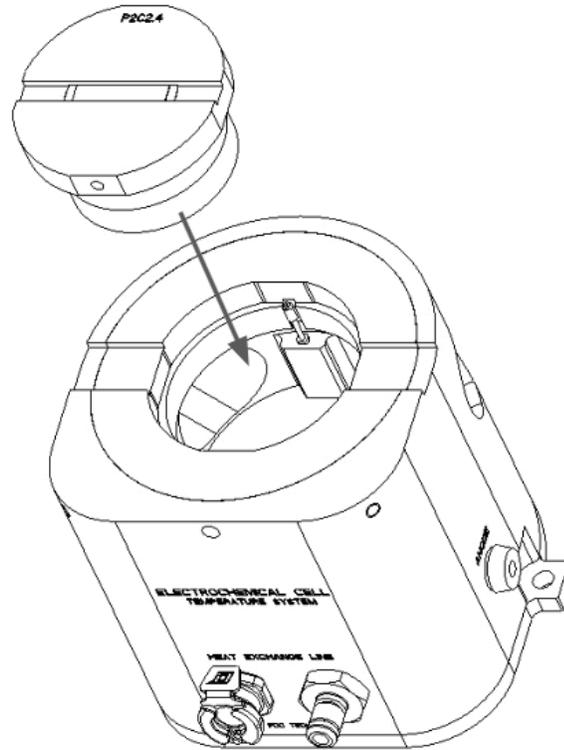


- 9** Tighten the bolts (rench M4x16L).
Tighten in numerical order. Do not tighten each bolt at once.



- 10** Insert the battery cell into the stage.

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2. Disassemble & Cleaning

- 1 After the test, disassemble in reverse order of assembly.
- 2 Ultrasonic cleaning in an IPA or Alcohol solution for 10 minute.
- 3 Check the resistance (under 1ohm) below the location with a multimeter.
- 4 If resistance is high, ultrasonic cleaning in acetone solution for 10 minute.
- 5 Check the resistance again.
- 6 If resistance is high again, rub with sandpaper (1000 or much higher)

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7 Keep in the oven or glove box.

Caution :

If you do not clean immediately after the test, the cell will be damaged.

