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RTP Canister Alignment to Alpha Port during Docking

Dynamic Design Pharma (DDP) has successfully completed the development and implementation of a simple material handling solution to the difficulties operators encounter in handling heavy RTP canisters during the docking process.

Description of the issue

The docking process of the RTP canister to the alpha port of the isolator system requires the physical alignment of the beta flange of the canister to the alpha port itself, the rotation of the canister until the lugs of the beta flange line up with the receptacles in the alpha flange and then turning the beta flange to complete the docking process. This process applies to docking of both standard "rigid" canisters as well as to the docking of Non-Rotating Canisters (NRC) that are manufactured by DDP.

The issue is that the beta lugs of the potentially heavy canister can get easily damaged by the "trial and error" alignment approach to the current docking process.

Two types of canister docking challenges

Canisters are docked to isolators of various shapes, sizes, configurations and occasionally at elevations that require a lifting device to raise the canister to the docking elevation. There are then two primary canister docking applications:

1. Application #1: The alpha port is located on the isolator wall and is low enough that the operator can manually align the canister during the docking operation.
2. Application #2: The alpha port is located at an elevation that requires lifting the canister using a hoist or similar device.

DDP's solution

Dynamic Design Pharma has resolved the alignment difficulties typical of the canister docking process by adding a supporting cradle to the front of the alpha port that provides support and alignment to the canister during the process. The mechanism was developed in two versions to address both applications described above.

For the first application, the mechanism attaches with a "hook-and-drop" system and without the use of tools to appropriate brackets that are attached to the front of the alpha port. By making the mounting of the cradle simple and without requiring tools, the mechanism can be easily removed from the isolator when not in use.

For the second application, the cradle mechanism is mounted on a swivel that is permanently mounted on the alpha port. The swivel allows the operator to swing the mechanism out of the way while the canister is raised by the hoist. A locking handle locks the cradle in either the "in" or the "out" position.

Conclusion

Dynamic Design Pharma continues the development of systems and devices that resolve operational difficulties associated with the material handling of transfer canisters in aseptic or containment isolator system.

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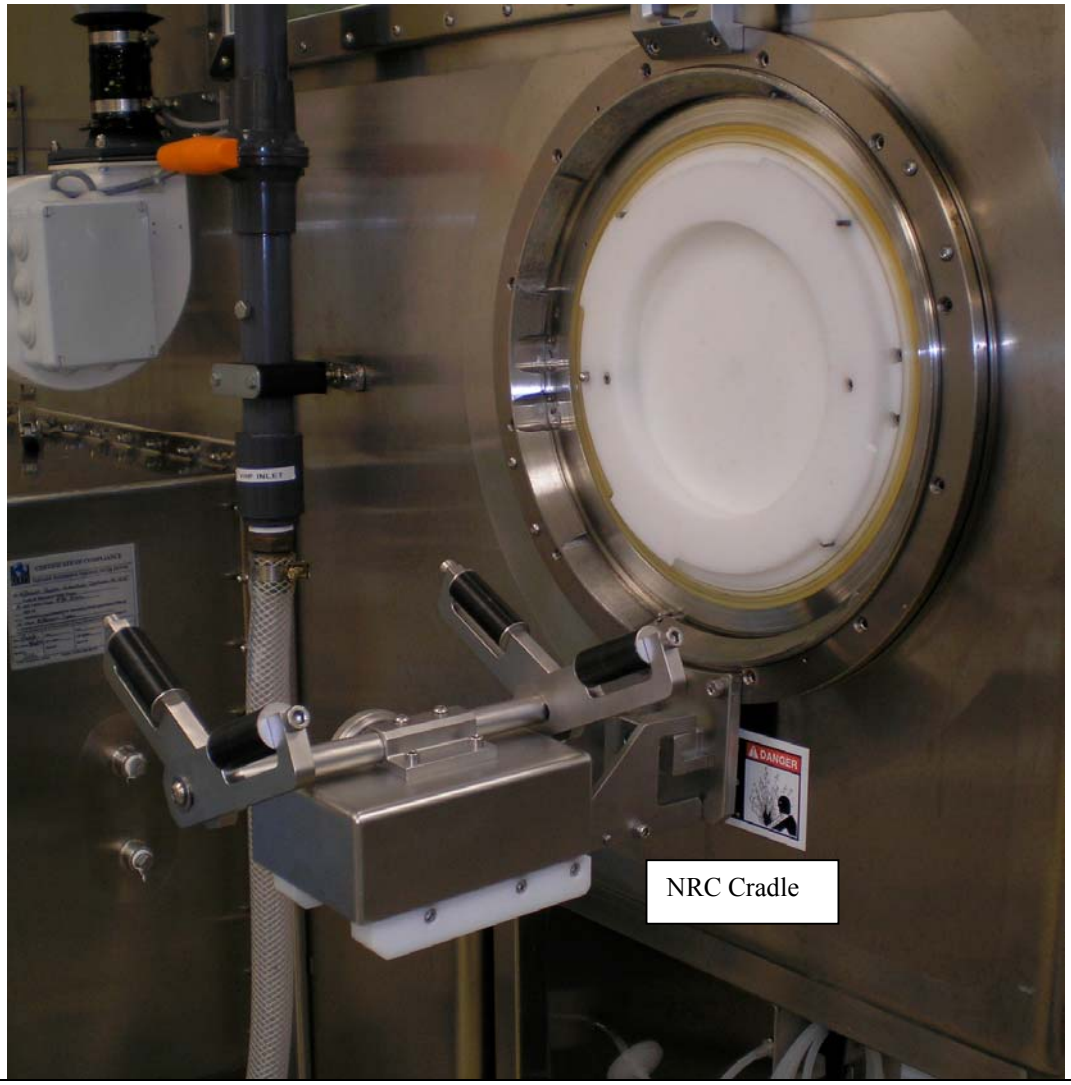

NRC Cradle shown connected to the alpha port.

Rollers permit axial movement of the canister.

Vertical fine tuning of position is made by turning a large diameter knob.

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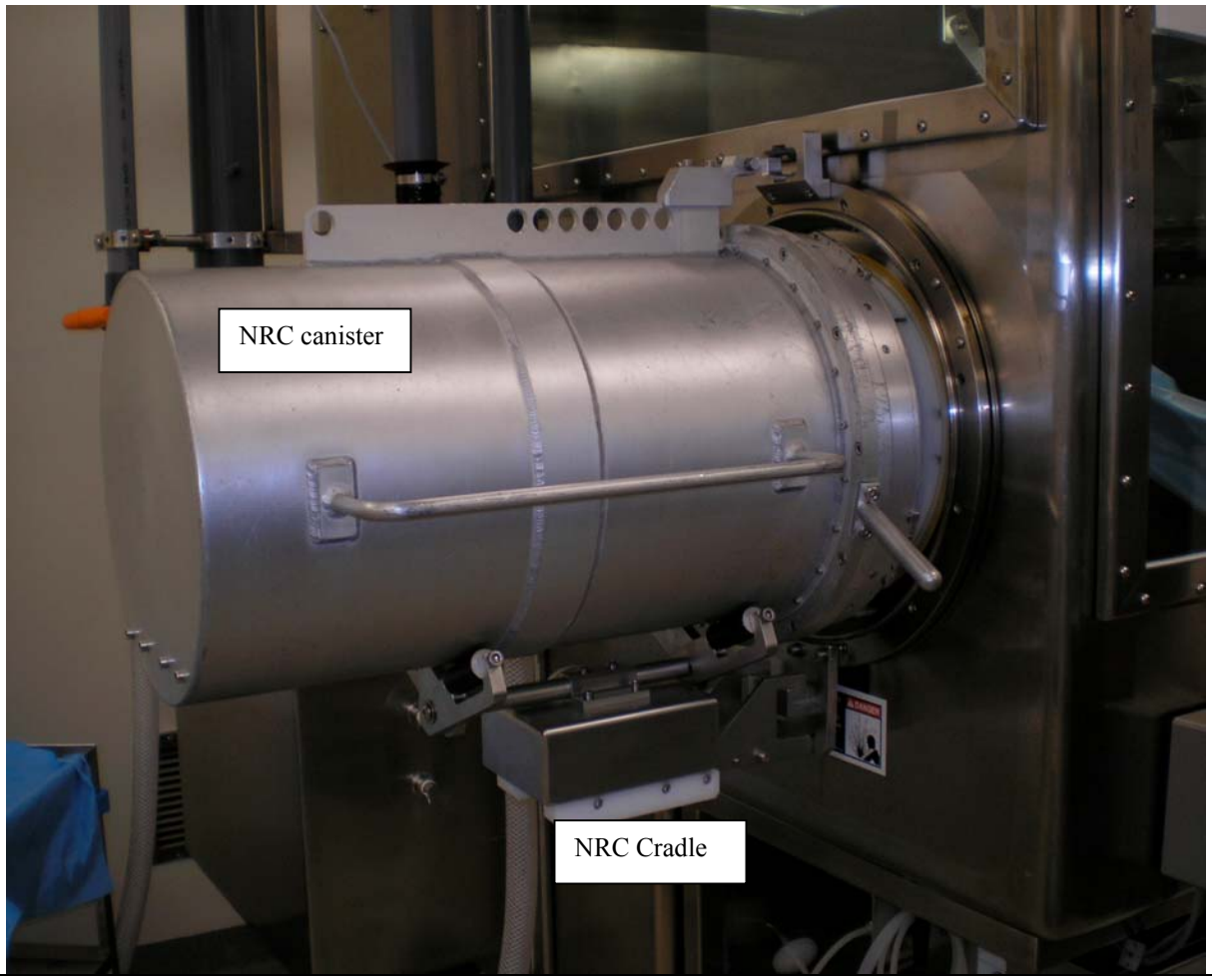

NRC Cradle shown supporting the NRC canister into alignment with the alpha port.

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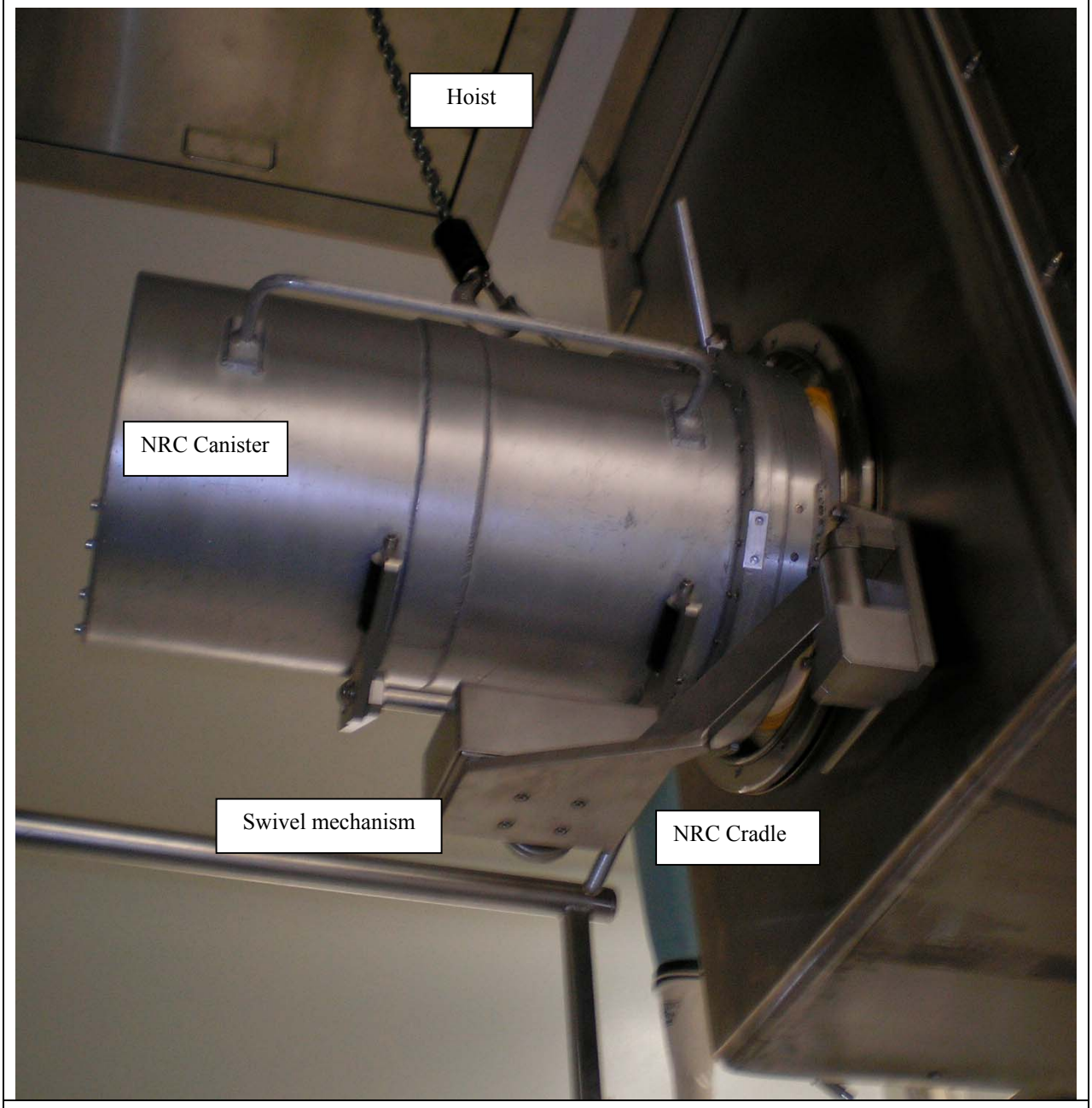

NRC Cradle shown supporting the NRC canister into alignment with the alpha port after being raised by the hoist.

The cradle swings out of the way of the canister while it is raised into position.