

# The NRC system

## Non-Rotating Beta flange and RTP canister

Manufactured by:

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Patent Pending

# System Description

The Non-Rotating Canister (NRC) is a RTP canister system that features an innovative beta flange that, by means of a custom bearing system and seal, is free to rotate in relationship to the canister.

The NRC beta flange is designed to interface with industry standard RTP ports, including La Calhene's DPTE. It attaches to the canister by means of a circular static seal and locking hardware.

The NRC canister, in its standard form, is a spun aluminum canister with an internal shuttle mechanism designed to hold a parts tray. It also features lifting handles and self supporting devices that permit hands free docking of the NRC onto the RTP port.

The non-rotating feature of the beta flange, yields the benefit of total versatility in the design of the NRC canister body. It can be manufactured in many different shapes, sizes and materials as required by the application at hand.

# Features

- Aluminum or stainless steel beta flange
- Bearing and dynamic seal system that permit rotation of the beta flange in relation to the canister body.
- Standard or custom designed canister body, as required by the application.
- Self support devices that permit docking the NRC to the RTP port without having to support the weight of the canister.
- Interface features to the transport and lift system manufactured by Dynamic Design Pharma. A totally safe method of handling the potentially heavy canisters in the manufacturing facility.
- Internal shuttle mechanism that serves the function of safely attaching a tray to the NRC canister body, ideal for safe handling of heavy machine parts in and out of isolator systems. The shuttle permit pulling the tray out of the NRC for easy reach of the components housed internally.
- Internal tray, custom designed to the application or in its standard form. Attaches to the shuttle without tools and permits safe handling of components.
- Absolute filter port, consisting of a 1 inch, 1-1/2 inch or 2 inch triclover flange, as required by the application.

# Specification

- Nominal beta flange size: 350mm, 270 mm
- Weight of 350 mm size (aluminum) with shuttle and tray: 22kg.
- Maximum weight of part that can handled by system: 40kg
- Length of standard canister body: 550mm
- Material: 6061-T6 aluminum alloy or 304 stainless steel
- Shuttle stroke from retracted to extended position: 500 mm
- Leak tightness: Capable of passing ammonia leak test when pressurized to 50 pascal internal pressure.
- Interface with standard La Calhene DPTE rapid Transfer Ports.
- The NRC is capable to withstand the temperature of steam sterilization and surface effects of VHP gas decontamination.

# Advantages over existing technology

The NRC's beta flange with its non-rotating canister interface permits applications that are impossible to implement with today's RTP canister technology.

- The shuttle and tray hardware permit the safe transfer of heavy or delicate parts into and out of isolator system.
- The canister body does not rotate. As a result, it features handling features and self supporting devices that make its transport and docking safe for the operator.
- Interface to a transport system, manufactured by Dynamic Design Pharma permits total handling of the loaded NRC without any lifting by the operator.
- The non-rotating NRC beta flange permits the customization of the canister body to the application. For example a motorized shuttle system or an air mixing module for VHP gas distribution.

# Applications

Following are examples of application that benefit the most from the NRC's features.

- Sterile machine parts transfer into the isolator system during the Change Over process between production lots.
- Sterile machine parts introduction and removal during campaign style production.
- Production supplies introduction such as micro supplies, environmental monitoring supplies, sanitization supplies.
- Continuous material flow such as stoppers or powder introduction and rejects removal.
- Air mixing fan module for application where additional air mixing is necessary to achieve proper VHP gas distribution.



**NRC - Aluminum 350mm size with standard canister body**



**NRC - Beta door removed - Shuttle mechanism retracted**





**NRC - Beta door removed - Shuttle mechanism extended**



NRC - Tray connected to shuttle shown in retracted position



**NRC - Tray connected to shuttle shown in extended position**