

# The NRC Lift/Transport system

Manufactured by:

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# System Description

The NRC Lift/Transport System is a transport and lifting device that is designed to interface with the Non-Rotating Canister (NRC). The Lift/Transport System provides means of docking, undocking and transporting the NRC canister without requiring the operator to support the weight of the canister during the necessary operations.

The NRC Lift/Transport System supports the NRC canister by suspending it by appropriate hooks. It features a manual drive mechanism which permits the operator to bring the NRC into vertical alignment with the DPTE port or other transporting devices as required by the operation.

The angle of the NRC supporting beam of the Lift/Transport System can be adjusted to bring the suspended NRC canister into proper angular alignment with the DPTE.

The NRC Lift/Transport System features free wheeling casters that permit easy movement of the system throughout the manufacturing facility.

# Features

- Stainless steel welded base with four casters, two swivel and two fixed.
- Vertical drive system to raise and lower the canister support assembly by turning an external hand wheel
- Fixed handle bar for system movement by the operator within the facility.
- NRC canister support assembly which interfaces with the canister by suspending it into alignment with the RTP port.
- Horizontal beam that is free to swivel in the vertical plane and whose angular alignment to the horizontal plane can be adjusted as required by the application.
- NRC interface consisting of metal hooks spaced to match interface features on the NRC.
- NRC interface hooks are fixed in the for/aft direction but are free to swing in the side to side direction to facilitate the hook up process of the NRC Lift to the NRC canister.
- The interface hooks have safety gates that swing down to lock the hooks onto the NRC canister.

# Specification

- Weight without NRC canister 50Kg (110 lbs)
- System height: 1869 mm (73.7 inch)
- NRC centerline in the “DOWN” position: 678 mm (26.7 inch)
- NRC centerline in the “UP” position: 1269 mm (50 inch)
- Resulting vertical travel: 591 mm (23.7 inch)
- Distance from vertical drive handle centerline and the floor: 895 mm (935.3 inch)
- Distance from transport handle to floor: 1229 mm (48.4 inch)
- Maximum torque required to raise a loaded NRC Canister (50Kg) is 10 inch-lbs.
- Drive resolution: 2.54 mm/turn (0.1 inch/turn)
- Horizontal tilt requirement: +/- 10 degrees from horizontal
- Front two casters: hard rubber, non-swivel type
- Rear two casters: hard rubber, swivel type.
- Lubrication: No lubrication necessary in any of the drive components.

## Advantages over existing technology

Today's typical RTP canister carts consist of a wheeled base that incorporates "V" shaped receptacles for housing the RTP canister. The cart base may also feature a vertical drive mechanism that allows adjustment of the canister in the vertical direction.

- It is impossible to bring such transport carts into position to achieve direct, hands free connection of the canister beta flange onto the DPTE. Operator handling of the RTP canister is necessary.
- Existing carts cannot accommodate for angular misalignment of the DPTE to the factory floor. As a result, physical handling of the loaded canister during the docking process is necessary.
- The canister being supported by existing carts is solidly supported. As a result, the canister cannot be "lightly moved" into alignment with the RTP port. This also requires handling of the loaded canister by the operator.



NRC Lift - Front view



NRC Lift - rear view



NRC Lift with NRC attached - Raised and lowered position



Front and rear view - with NRC suspended





Detail - NRC Interface with safety gate