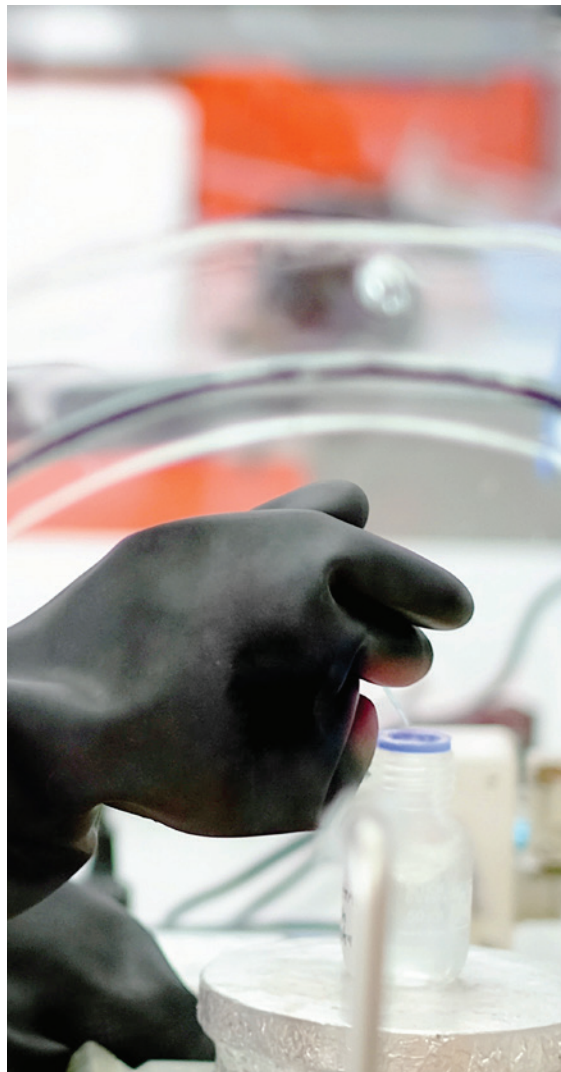
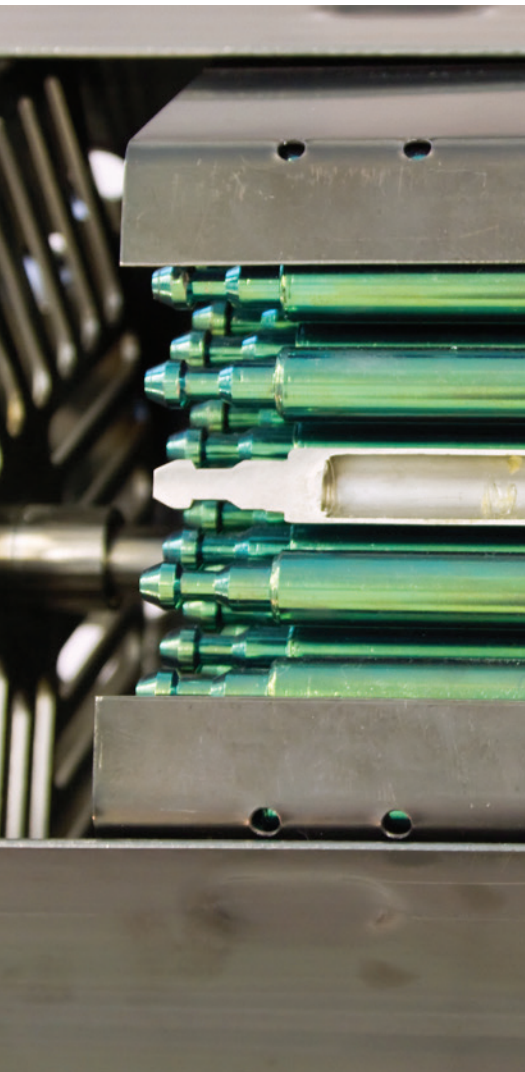


# **CRL**

## ***Central Research Laboratories***

a **DESTACO** company



# **NUCLEAR**

*Isolation, Transfer, and Containment Solutions*





a DESTACO company

### ***A Legacy of Innovative Experience***

In 1945, at the dawn of the Atomic Age, three scientists from the Massachusetts Institute of Technology founded Central Research Laboratories (CRL) and pioneered early development of safer methods for handling hazardous and toxic products produced by this industry. With a legacy of over 70 years of innovative experience, CRL has continued to develop and build a full line of remote handling and containment solutions including Telemanipulators, Transfer Systems, Glove Ports, and Waste Drum Transfer Systems. These products allow operators to safely and efficiently perform various tasks in Nuclear and Life Science industries across the world.

The CRL team has the experience, expertise, and technologies to help with all your remote handling needs and strives to continually improve and develop innovative technology that help its customers achieve the highest level of performance. CRL is committed to its customers' needs and developing the best solutions for every project. Every product manufactured is created with those specific needs in mind to deliver the most customized solution available for every application.


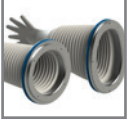
***crlsolutions.com***

*Central Research*  
**laboratories**

RED WING, MINN.

***Proven Technology. Customized Solutions.***

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# ***Proven Technology Customized for Your Specific Needs.***

## ***Remote Handling, Transfer, and Containment Solutions***

Since 1945, CRL has been developing innovative technologies for the safe and efficient handling of hazardous materials. As a pioneer in the early development of safer methods of handling materials produced during the Atomic Age, our solutions continue to evolve throughout the Nuclear industry; allowing operators to safely perform dexterous maneuvers in hazardous environments, protect from direct contact, and safely keep hazardous materials contained during transfer.

Every application has unique requirements to ensure the safety and confinement of these hazardous materials. CRL solutions offer flexibility and customization to provide the best solution possible for safe and confident handling – for every application need.

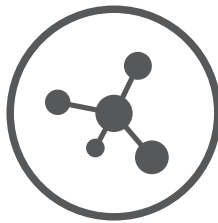


## ***Application Solutions for:***



RESEARCH, DEVELOPMENT  
(R&D) & DEMOLITION AND  
DECONTAMINATION (D&D)

Remote manipulation in  
hazardous environments



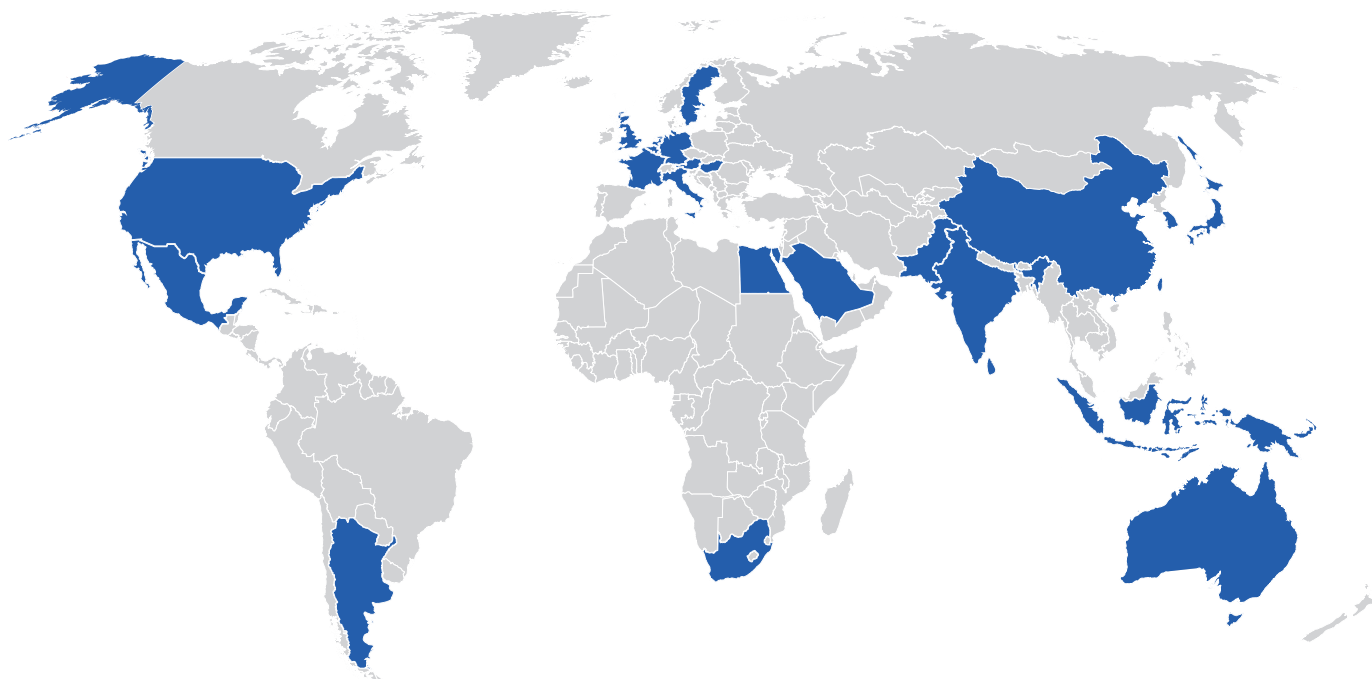
RADIOPHARMA

Safe handling of  
medicinal isotopes



MATERIAL TRANSFER

Contained transfer of  
hazardous materials



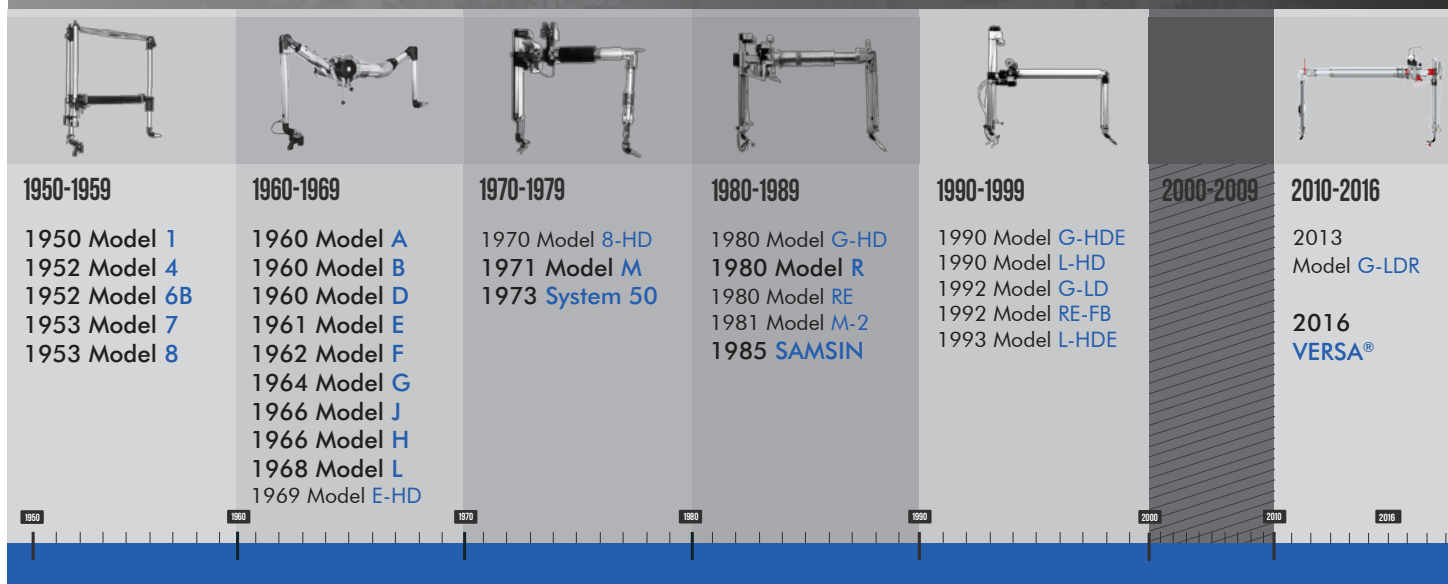
**70**  
years of  
experience

Over  
**20**  
telemanipulator  
models created

**7800+**  
telemanipulators  
sold

In  
**22**  
countries  
across the world

## HISTORY OF CRL TELEMANIPULATORS



## One-Piece Telemanipulators

**Reliable, cost-effective remote handling solution for small to large cells**

The one-piece telemanipulator is the most widely used and consists of a command (master) arm, remote (slave) arm, and through-the-wall tube assembled as one unit. Stainless steel tapes and cables are used to transmit motions from the command arm to the remote arm in continuous closed loops. The single unit telemanipulator is installed and removed in the hot cell from the operator's side.

- Sealed and unsealed options available
- Optional radiation shielding and booting available

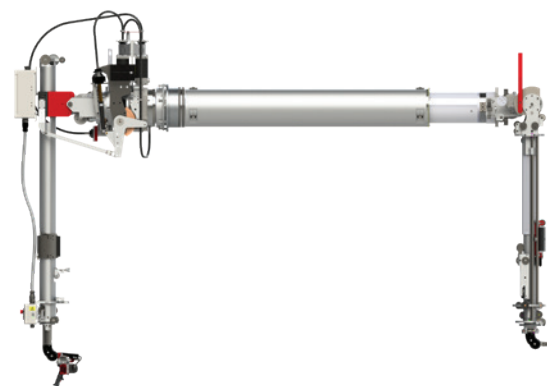


## Three-Piece Telemanipulators

**For remote handling in inert or high particulate radiation environments**

The three-piece telemanipulator is typically used in an inert atmosphere cell, which requires careful environmental control. Typically the in-cell atmosphere is at a negative pressure for three-piece telemanipulator applications. The three-piece telemanipulator consists of three independent assemblies, the command (master) arm, the remote (slave) arm and the through-the-wall tube (seal tube).

- Optional booting assembly can be added to restrict air flow into the hot cell and to protect the remote arm from contamination
- The command and remote arms are removable



## Options and Accessories

All models are customizable with unique options and accessories to fit your specific application needs. See our Telemanipulator Visual Selection Guide for all available options.



Radiation Shielding  
and Thru-Tube



Tong/Jaws



Handles



Locks



Booting



Installation/Removal  
Carts

## Rapid Transfer Ports (RTP)

**For safe and contained transfer of product or components into or out of the glovebox**

The CRL Rapid Transfer Port (RTP) is a double door transfer system that consists of two main components, the alpha assembly and the beta assembly. The alpha assembly is normally mounted to the wall of a glovebox and the beta assembly is mobile and connected to a container, bag, or process component. When the two assemblies are mated, hazardous materials can be rapidly transferred in and out of the glovebox without breaking containment, while maintaining the safety of the operators.

- Rapid repeatable transfers without breaking containment
- Mechanical interlocks to prevent improper port operation
- 316L stainless steel alpha flange with stainless steel, polypropylene or liquid transfer door options available
- Available in 105, 190, 270, 350, and 460 sizes



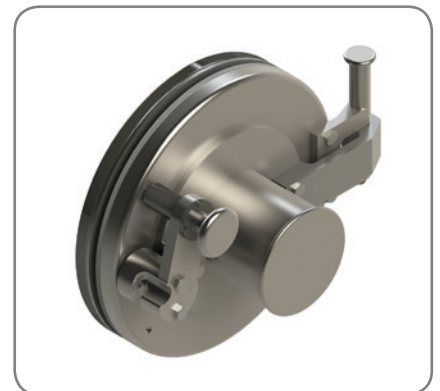
## Available Options



Polypropylene Door



Stainless Steel Door



Liquid Transfer Door

## Standard Beta Containers

For safe and contained transport or storage of product, components, samples, and waste

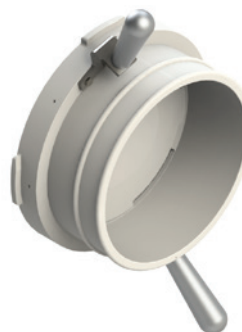
- Gas tight design
- Multiple materials, sizes, and lengths available



## Beta Bag Flange

For product and component transfer into or out of the glovebox

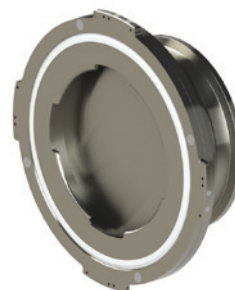
- Beta Bag Flange used with disposable bags



## Beta Flange with Tri-Clamp Fitting

For connection of large tanks and process equipment to the glovebox

- Charging of formulation tanks and reactors
- Discharging from process equipment



## Custom Beta Options

### Solutions for Every Application

We specialize in customizing our current products and developing new products to meet the specific needs of our customers. If your project requires a custom Beta assembly, we can develop a cost effective solution to help maximize your productivity.

## GLOVE PORT SYSTEMS

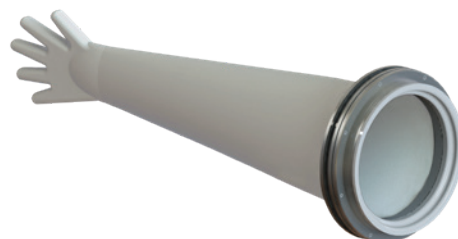
CRL Glove Port Systems are designed as efficient, cost-effective solutions for maintaining contained conditions during operations and glove changes.

### Push-Through Glove Ports

**A safe, fast-change glove port solution with multiple accessories to expand operational capabilities**

The CRL Push-Through Glove Port System allows for the interchangeability between gloves and accessories without losing containment or risking the spread of contamination. The two main components of the system are the glove ring, which mounts to the wall and the support ring or accessory that creates a leak-tight compression seal inside the glove ring.

- Multiple sizes available; Round (4, 6, 8, 12 and 15 in.) and Oval (8 and 12 in.) with weld-in or clamp-in glove rings
- Push-through accessories: viewing windows, bag-out bags, plugs, and utility panels
- Safety covers available; sensors added as customizable option
- Push-through ejection tool for safe, fast glove or accessory change



### Retro-Fit Ports

**For use with existing ports**

The CRL Retro-Fit Port allows non Push-Through ports to become Push-Through ports that are capable of utilizing all CRL Push-Through technology.

- Available in oval and round configurations



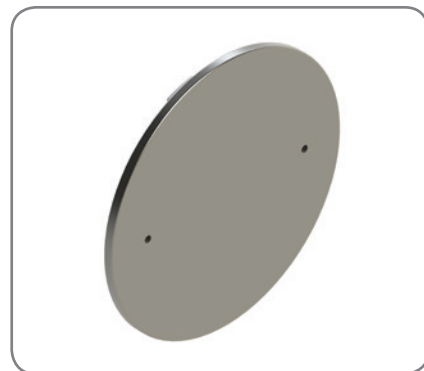
### Accessories



Ejection Tool



Bag-Out Bag



Safety Cover

## WASTE DRUM TRANSFER SYSTEM

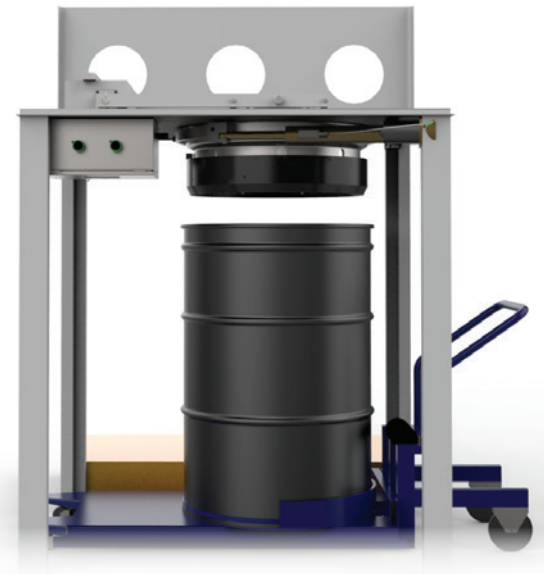
### Waste and Bulk Packaging Solutions

CRL's Waste Drum Transfer System (WDTs) was developed to address the need for a safer method of transferring waste from gloveboxes and hot cells.

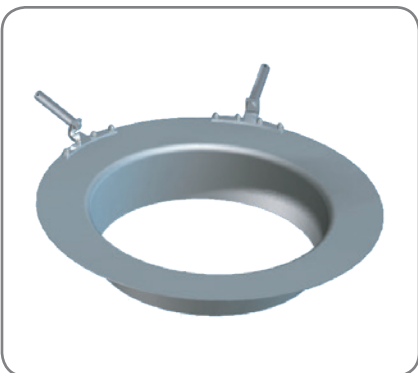
The system offers the ability to mitigate dangerous bag-out processes from TRansUranic and High-Level Waste transfer and re-packaging operations.

This patented system has been engineered to allow rapid and repeatable transfers without breaking cell containment.

- Built-in safety interlocks eliminates accidental breach of containment
- Actuated docking for fast, safe drum connect/disconnect operation
- Drum liner capable of multiple filling cycles
- Bagless RTP transfer system eliminates breach of containment while improving ergonomic safety for the operator
- 30G, 55G, or custom size drum liners available in PE or SST materials



### Accessories



Funnel Systems



Drum & Liner Assembly



PE or SST Drum Liners



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