



Equipment  
for Glove Boxes



# Direct manipulation inside a contained space: equipment for Glove Boxes



### ASN (Autorité de Sûreté Nucléaire) definition:

A Glove Box is a confined space that completely separates a procedure by a transparent wall (made of specific material that partly filters radiation). Gloves are installed in the wall so that manipulation can be carried out in complete security on radio-active materials\*. A Glove Box is usually equipped with a ventilation system which puts it into negative pressure compared to the exterior, in order to keep all radio-active products inside it.

### LaCalhene offers a complete range of manipulation solutions for Glove Boxes.

#### Three solutions are proposed:

- An entirely manual system consisting of glove ports and bag ports and including a large number of accessories
- The J2L system, with insertion and removal of gloves by ejecting device. This system allows a simple change of equipment without breaking the containment.
- The AD system, with insertion and removal of gloves by ejecting device fitted with interlocks. Fast and easy to use, this system allows a simple change of equipment without breaking the containment.

Many accessories are available, from internal doors, locked security rings, bungs to windows, etc.

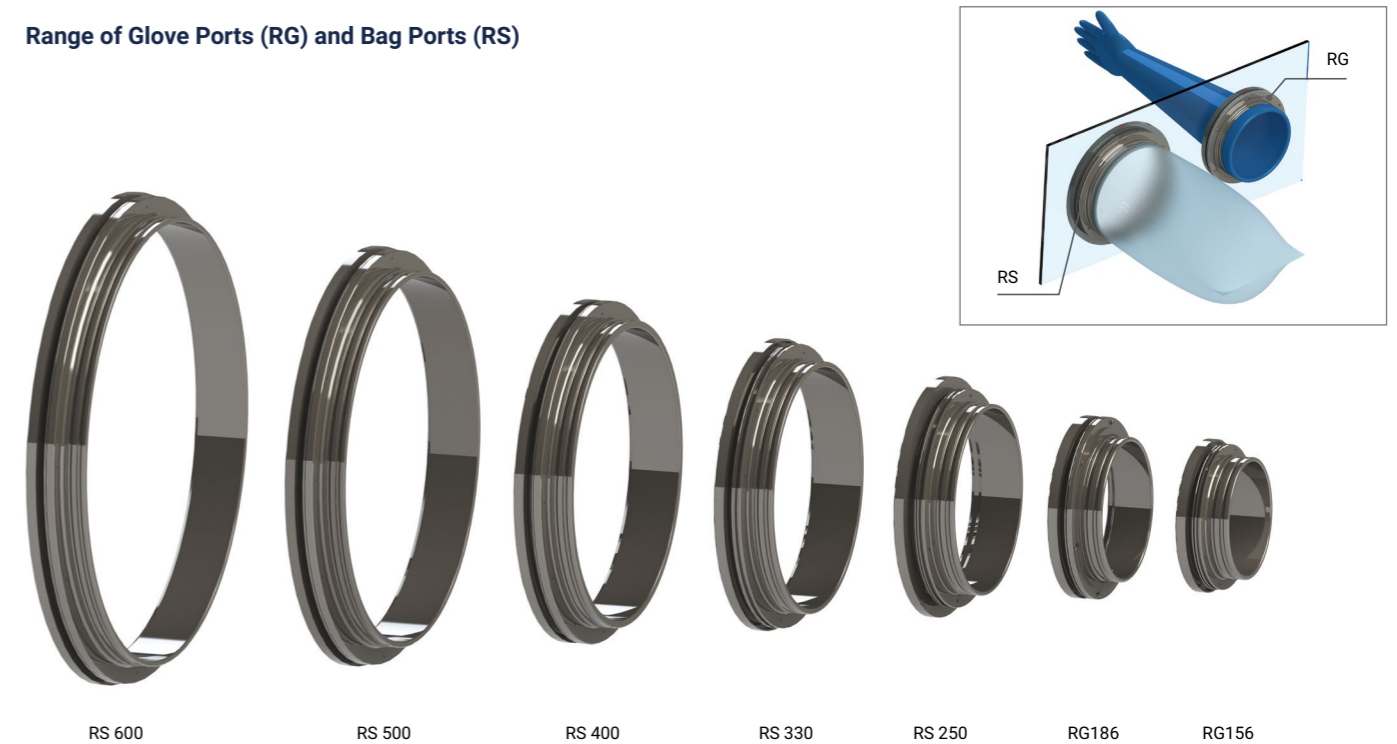
Various types of glove material are available as required: neoprene, yellow shielded polyurethane, non shielded polyurethane, chlorosulfonated polyethylene (CSM) and butyl. Glove material must be selected carefully for optimal adaptation to the cell environment (acid, radioactivity, gas, etc.).

Our glove systems (J2L, AD et 22AD) are 100% leak tested by pressure drop.

\* It is also possible to install a remote manipulator (MA 30 or MA 11-80) inside a glove box, depending on the size of the box and the work to be done.

# A complete range of Glove Ports and Bag Ports for manual mounting

### Range of Glove Ports (RG) and Bag Ports (RS)

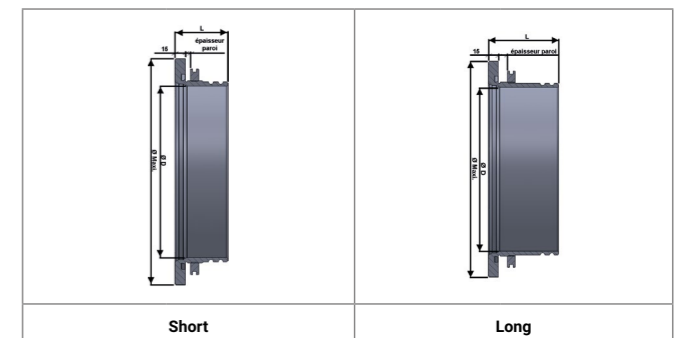


### Dimensions and characteristics

For each RS/RG dimension, several different materials and lengths are proposed.

The range of glove ports and bag ports is designed for walls that are 3 to 12 millimetres thick.

On request, this equipment can also be adapted to thicker walls.



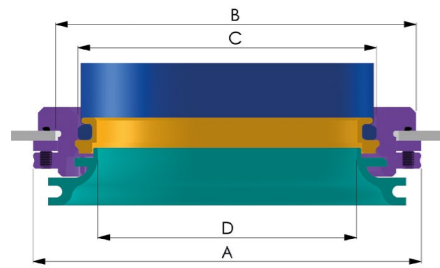
Type	Ø D	Ø MAX	Ø drilling +1/-0mm	Short		Long	
				L	Material	L	Material
RG 156	156 mm	Ø 215 mm	Ø 172,5 mm	70 mm	Stainless Steel & PP	100 mm	INOX & PP
RGE-SAB 186	186 mm	Ø 255 mm	Ø 204 mm	70 mm	Stainless Steel & PP	100 mm	INOX & PP
RS 250	250 mm	Ø 355 mm	Ø 267,5 mm	76 mm	Stainless Steel	106 mm	INOX
RS 330	330 mm	Ø 405 mm	Ø 354 mm	76 mm	Stainless Steel	106 mm	INOX
RS 400	400 mm	Ø 475 mm	Ø 430 mm	76 mm 78 mm	Stainless Steel	106 mm	INOX
RS 500	500 mm	Ø 580 mm	Ø 523 mm	76 mm	Stainless Steel	-	-
RS 600	600 mm	Ø 680 mm	Ø 624 mm	76 mm 53 mm	Stainless Steel	-	-



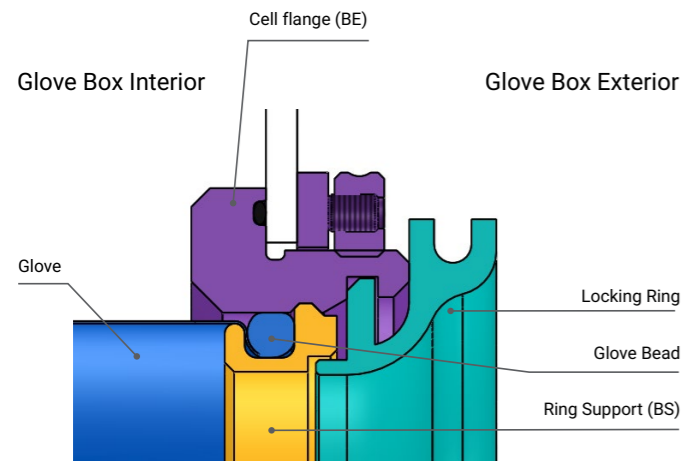
# J2L System: interchangeability with ejection ring, for fast glove change-over without breaking containment

To prevent manipulation errors during glove change-over, LaCalhene designed an ejection ring system (J2L) for safe glove change-over without breaking containment using an ejecting device.

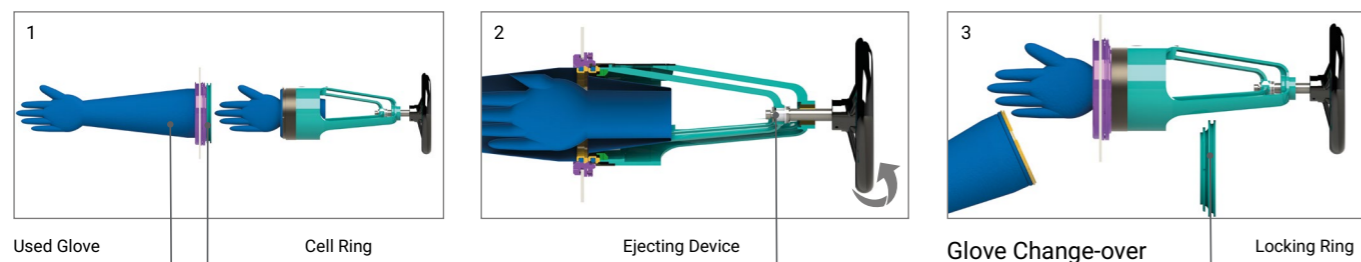
## Equipment dimensions for Glove Boxes



	A	B	C	D
	Ø MAX	Ø drilling hole	Ø BE thru-tube	Ø BS thru-tube
22	190	172,5	150	130
EUR	235	204	175	155



## J2L Glove Change-Over Principle



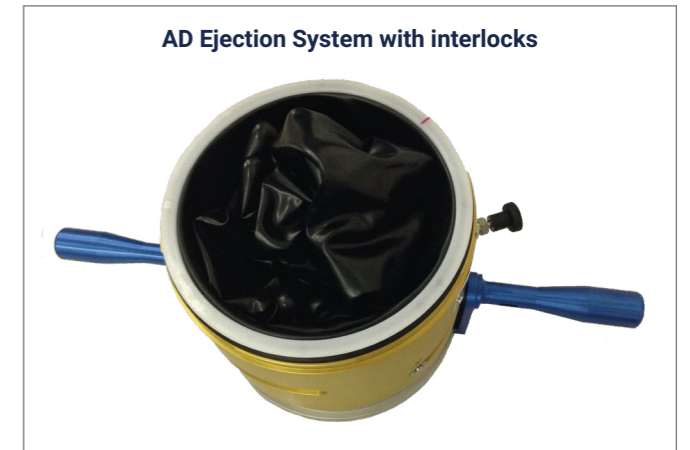
# AD System, high performance containment fast, safe and secure

Moving forward from the J2L glove change system, LaCalhene developed the AD system, a step forward in Glove Box containment. Here, containment is ensured by the lip seal instead of the glove bead.

The system includes:

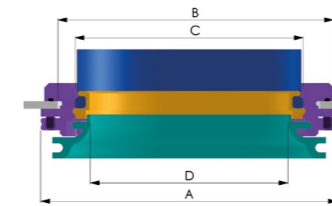
- A ergonomic cell ring (174 mm diameter).
- A glove or other accessory mounted on a ring support.
- An ejecting device with integral thru-tube and interlocks for fast, easy manipulation.

The gaskets maintain containment at all times, ensuring leaktightness (standard NF ISO 11933-1). The ring support has exceptional resistance to dislocation (snap-on system) and the ejecting device maintains the glove in the correct position (thumbs up) at all times.

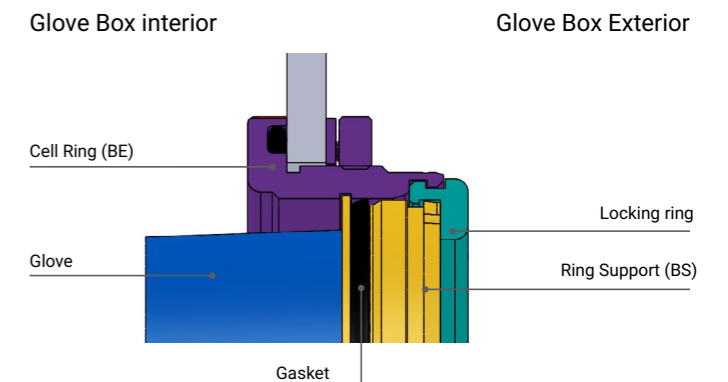


A wide range of AD ejection devices is available to be used on different types of installation.

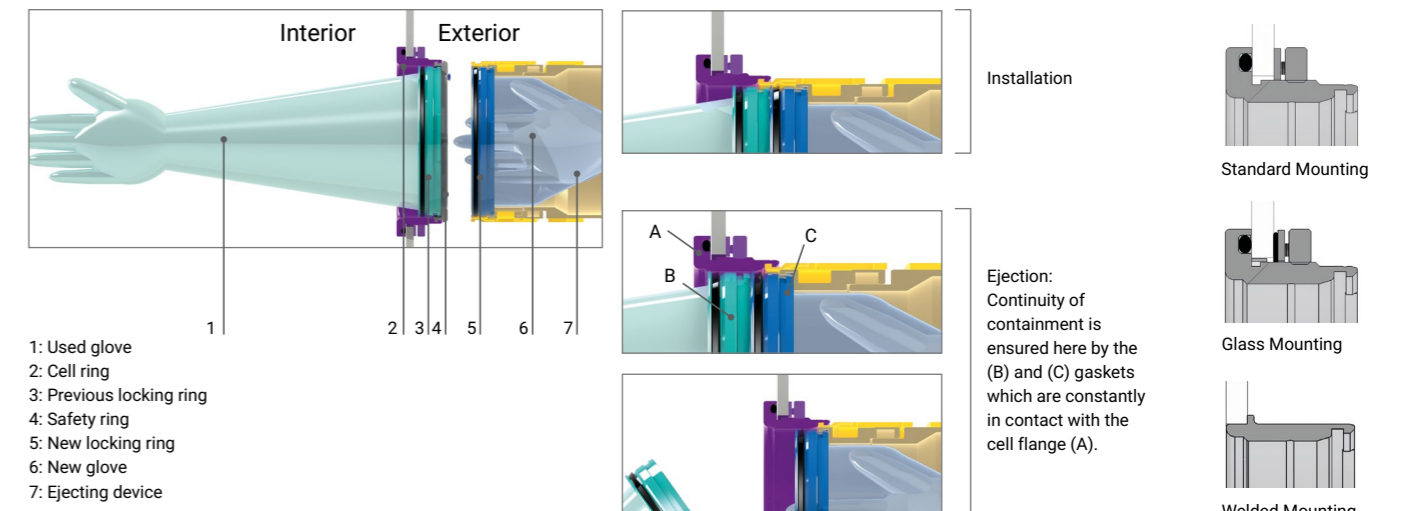
## AD Ejection System with interlocks



	A	B	C	D
	Ø MAX	Ø drilling hole	Ø BE thru-tube	Ø BS thru-tube
AD	250	224	200	174



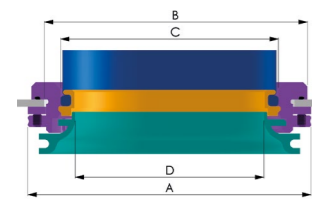
## AD Glove Change-Over Principle



# The 22AD solution: a combination of the J2L and AD systems

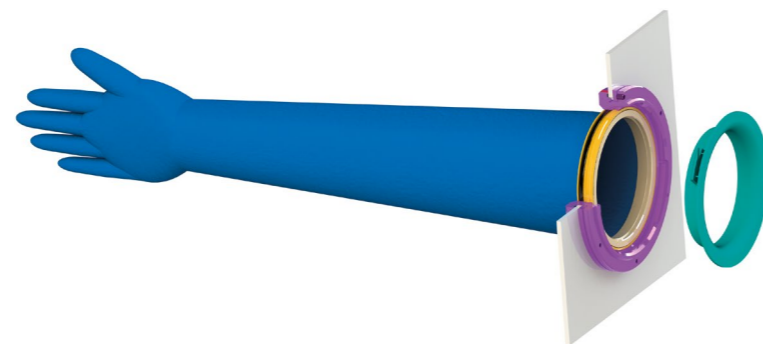
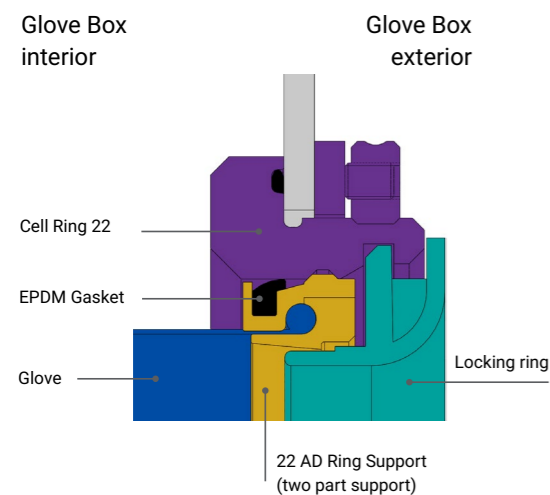
LaCalhene developed a system compatible with a BE 22 cell ring.  
The useful diameter of the 22AD solution is 121 mm.

## Equipment dimensions for Glove Boxes



	A	B	C	D
	Ø MAX	Ø drilling hole	Ø BE thru-tube	Ø BS thru-tube
22AD	190	172,5	150	121

## 22AD parts



# How to select your glove system

Criteria to simplify and optimize selection of a system to fit a Glove Box:

- operators' morphology,
- the work to be done inside the Glove Box (and associated volumes),
- material insertion / extraction requirements,
- containment level (type of materials to be contained and hazard level).

# Accessories adapted to each situation and each system

## Accessories for manual glove ports and bag ports

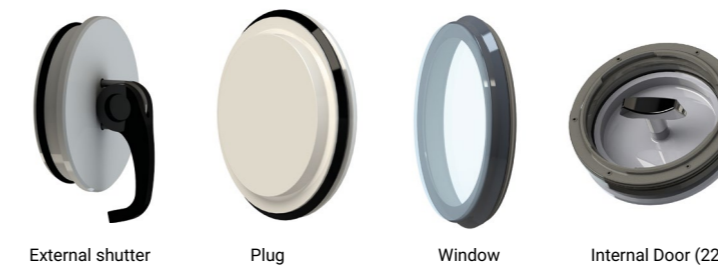
PVC or PUR\* 30/100 bag for bag ports / glove ports

RS/RG SIZE	PP DOOR	PP Cover	Aluminium Cover	Cross brace	Tightening Key
RG 156	à 1 et 2 clips	x	x		x
RGE-SAB 186	à 1 clip		x	x	x
RS 250	à 1 clip	x	x		x
RS 330	à 1 clip	x	x		x
RS 400	à 1 et 2 clips		x	x	x
RS 500	à 1 clip		x	x	x
RS 600			x	x	x

\* Contact us for polyurethane bags.

Our sleeves are available in standard lengths. On request, specific lengths can be considered.

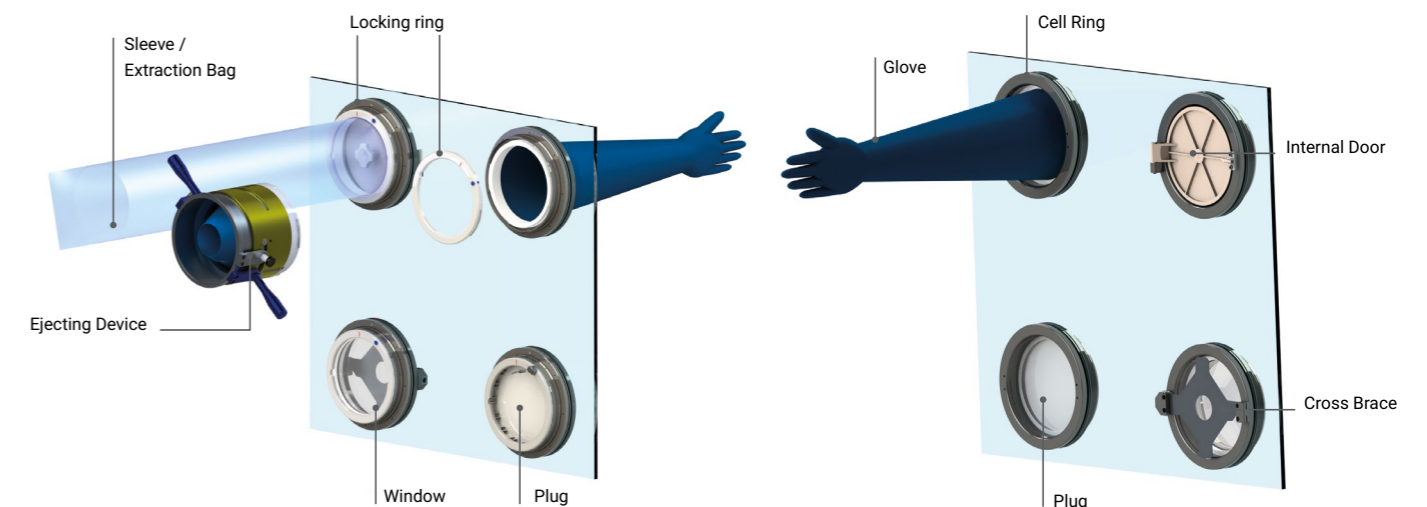
## J2L Accessories



Our sleeves are available in standard lengths. On request, specific lengths can be considered.

Sleeves /extraction bags in various lengths are also available for the J2L device.

## Accessories for the AD system



View from outside the Glove Box

View from inside the Glove Box



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LaCalhene is an equipment manufacturer specialized in material to protect human beings in a hostile environment, protect a product against the surrounding environment, and protect the environment from hazardous products. Its customer base is half in the nuclear field and half in the pharmaceutical field.

In the nuclear sector La Calhène supplies 4 product lines: remote manipulators, transfer systems (the DPTE® range, standard and special applications), Glove Box ports, and shielded casks for transfer / transport. La Calhène supplies to 5 market segments: nuclear fuel manufacture, spent fuel recycling, radiopharmacy, laboratory / universities / units of research, and dismantling / decommissioning / sanitization.

On the basis of its long experience in the nuclear sector, Getinge La Calhène developed a set of solutions and equipment for the pharmaceutical industry, in particular for isolators and sterile transfer systems (DPTE® and DPTE-BetaBag®).

LaCalhene is an active member of:

