

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.

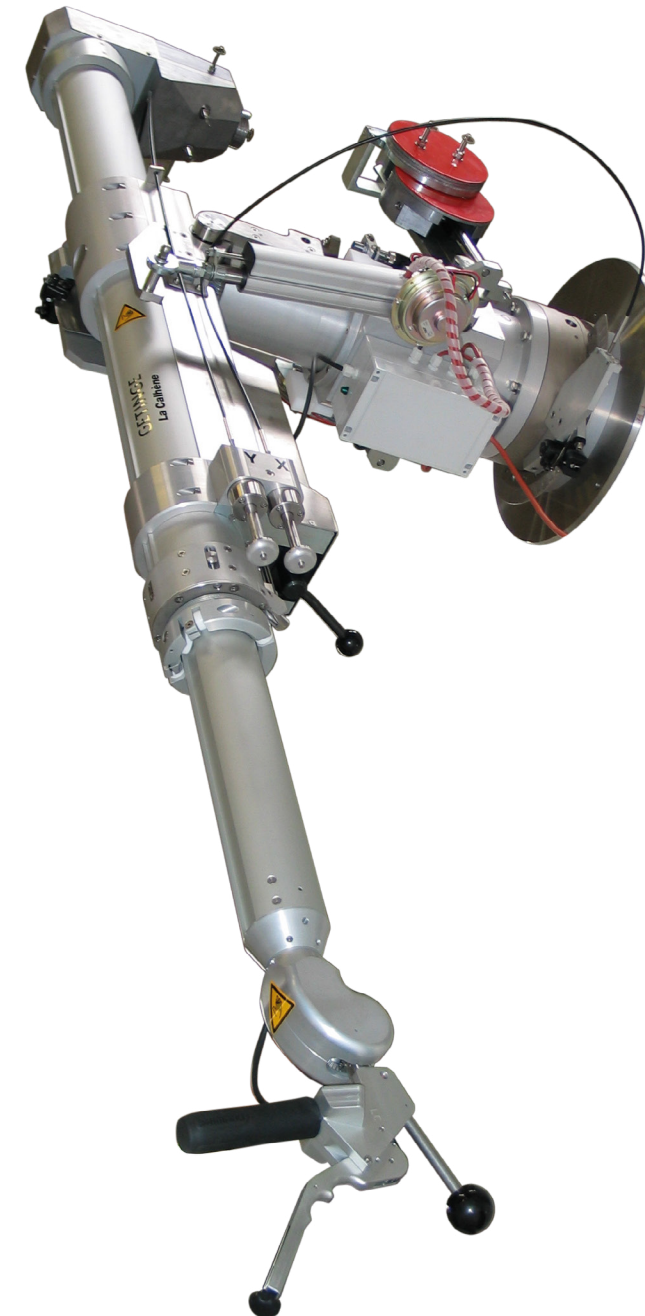
In the nuclear sector LaCalhene supplies 4 product lines: remote manipulators, transfer systems (the DPTE® range, standard and special applications), glove box ports, and shielded casks for transfer / transport. LaCalhene supplies to 5 market segments: nuclear fuel manufacture, spent fuel recycling, 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:

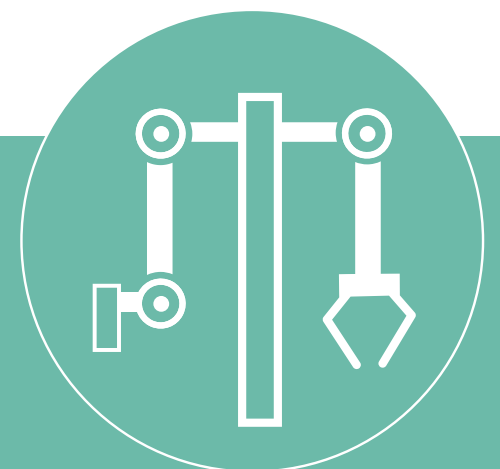


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MT 120

Mechanical telescopic
 remote manipulator



A remote manipulator for medium / large cells

The MT 120 is a telescopic design Master-Slave remote manipulator designed to fit inside medium and large cells. Combined with a range of operating accessories, it provides a sturdy and reliable manipulation system.

The MT 120 manipulator is based on the experience we have acquired in remote manipulation. The latest in our range of manipulators (MA 30, MA 11-80 et MT 200), the MT 120 covers all requirements in terms of remote manipulation. It has a nominal loading capacity of 12 daN (manufacturer's test value).

It is available in two versions:

- Non-disconnectable, with continuous kinematics,
- Disconnectable in two parts: the Master Arm and the Thru-Tube/Slave Arm subassembly.

To reduce corrosion risk and facilitate equipment decontamination, the use of anodised aluminium and stainless steel has been prioritized. Containment is provided by a leaktight sleeve installed on a sealed ring on the slave arm side.

Design

- (A) Master Arm fully counterbalanced
- (B) Thru-Tube, including radiation protection shielding
- (C) Slave Arm

In the disconnectable version the master arm (A) is disconnectable.

Kinematics

Depending on the motion concerned, kinematics use cables, chains, transmission bars and serrated gears.

The disconnectable version is equipped with a gear train between master and thru tube, used to disconnect or reconnect the kinematics.

Connection and disconnection are performed simply and quickly. The azimuth, wrist, gripping and Z extension movements are transmitted by cables inside the thru-tube.

The Y movement, which has to support higher levels of stress, is transmitted by two chains linked together by two rods.

The kinematics inside the thru-tube are designed to limit direct laminar leakage of radiation.



Motion (1)

Major X (lateral) and Y (depth) motions are equipped with electrical offsets (1) for greater operator comfort and to increase the equipment's working range. They are controlled by the handle and transmitted by two actuators mounted on the master arm.

Motion Brakes (2)

Motion brakes are performed by three mechanical controls located at the base of the master arm and acting on X, Y and Z motion. The tongs orientation and azimuth (also denoted «small movements») brake system is included in the Z motion. The gripping motion brake is actuated by a control integrated in the handle.

Balancing (3)

Complete no-load balancing is a single system that operates irrespective of the tongs' spatial position including X and Y electrical offsets. It makes the MT 120 very efficient and comfortable to use, from the point of view of the operators.

Arm Ends Fitting

- End effectors consist of wrist joints (4) that are not disconnectable and to which the master actuator (handle) and the slave tool (tongs) are connected. These wrist joints are identical.
- The master actuator (5) is an ambidextrous ergonomic handle equipped with buttons controlling X and Y offset motions and the tongs clamping brake.
- The standard slave tool (6) is a parallel clamping tongs equipped with jaws that may or may not be disconnectable. They have a 90 mm opening and a clamping force of more than 20 daN.

Wall Thru-Tube (B)

The MT 120 thru-tube is unsealed type. On the hot side, containment is provided by a booting (which also functions as slave arm protection) on a ring ejection system which is coupled with the cell ring. It is installed without interrupting containment by means of a pneumatic ejection device.

The standard MT 120 is designed for a wall thru-tube with an internal diameter of 190.5 mm / 7.5 inch and a BE CC type cell ring. A version for a 254 mm / 10 inch wall-thru-tube (identical to the MT 200) is also available, using the BE 88 type cell ring.

“Optimised protection” which further limits laminar leakage from standard shielding is available as an option. Neutronic protection using “Burnguard” HDPE washers can also be supplied as an option.

Accessories

- Handling and installation lifting device,
- Storage trolley,
- Pneumatic ejection device for replacing the sealing booting,
- Parking fixture for tongs, jaws and sealed adaptor disconnection and connection,
- Maintenance toolkit,
- Tool for setting the slave arm into horizontal position (for the disconnectable model).

