

Our innovations



MT 200 TAO - Computer assisted remote manipulator

- 20 kg capacity in all positions with force feedback
- Robotic mode for repetitive tasks
- Poly-articulated Master Arm using haptic technology
- The Slave Arm can reach the ceiling of the hot cell, multiplying the work volume by 3 compared to the MT 200
- No electrical or electronic components in the hot cell.
- MTBF** 2 to 10 times that of the MT 200, depending on the type of work task
- As well as direct vision work, remote working (up to 200 m from the cell) can be done via imaging systems (camera, 3D, etc.)



TERMAN TAO - Computer assisted remote manipulator

- With all the advantages of the MT 200 TAO plus some additional specifics for the slave arm
- An exceptionally rigid, resistant, precise and long-lasting slave arm
- Robotic mode in all positions
- Highly dexterous thanks to infinite azimuth and infinite rotation on the tongs
- MTBF**: 1000 hours (reference duty cycle)
- Thru-tube is compatible with La Calhène remote manipulators, the MT 200 and MT 200 TAO.

** MTBF, Mean Time Between Failures



Onboard Camera System

Visual assistance in hot cells

The camera is directly clipped onto the telemanipulator tong, giving a detailed view of the manipulations to be done, while still allowing the tongs to be used.

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La Calhène 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®).

La Calhène is an active member of:



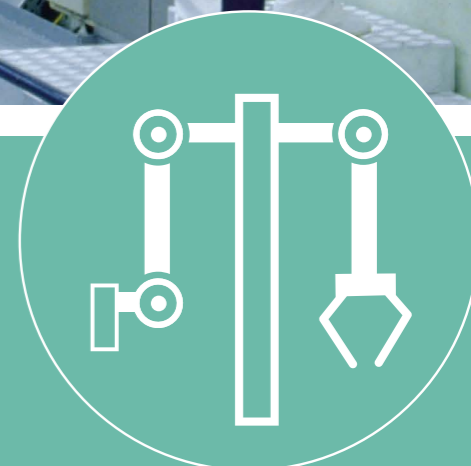
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Remote Manipulators

Solutions adapted to all types of hot cells



Wall manipulators: Working remotely with appropriate protection

Like other industries where there is a human and environmental risk (chemicals, pharmaceuticals, pyrotechnics, etc.), **the nuclear industry requires the use of specific equipment** in order to operate and service installations containing radioactive or toxic substances.

La Calhène (which became La Calhène in 2005), has been supplying industries in the nuclear sector for over fifty years, with systems and products complying with their demands in terms of reliability, safety, security and performance.

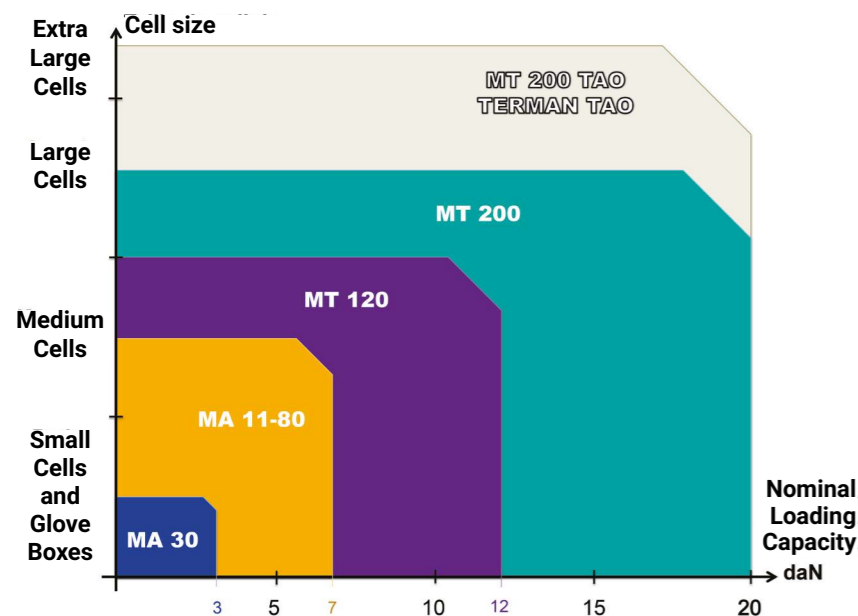
La Calhène offers a complete range of mechanical remote manipulator arms which extend the operator's ability to manipulate in hostile environments.

Powerful and ergonomic, each manipulator and its array of accessories has been designed and manufactured under strict quality control conditions. Their simple and robust design is the key to keeping maintenance costs low.

A team of qualified technicians is available to service or modify installed equipment. Our Training Centre keeps customers' operators up to date. We provide a complete service including spare parts supply throughout the lifetime of our products.

Our remote manipulators guarantee containment and radiological protection adapted to the cell environment. They are installed with leaktight sleeves. In specific cases, the MT 200 is equipped with a leaktight throughtube.

How to select your remote manipulator



7 degrees of freedom for optimal manipulation: three positioning degrees (Figure 1), three orienting degrees (Figure 2) and tongs tightening.

Figure 1: large movements

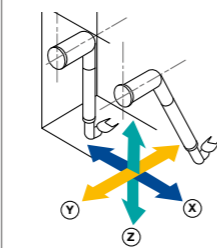
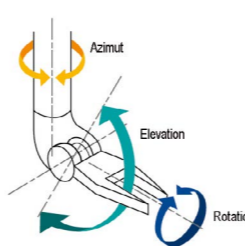


Figure 2: small movements



A wide range for all your needs



MA 11-80
A Master - Slave Manipulator with articulated arms

- Supplied in short, medium and long sizes
- Nominal load capacity: 6 to 7 daN* (depending on version)

- Load capacity at hook: 12 daN*
- For work in glove boxes, small and medium size hot cells
- Non-disconnectable
- Protective sleeve mounted on BE 22 cell ring
- Master-Slave electrical offset gives ergonomics that cannot be matched in this range of equipment.



MA 30
A Master - Slave Manipulator with articulated arms

- Supplied in short, medium and long sizes

- Nominal load capacity: 2.5 to 3.5 daN* (depending on version)
- Precise manipulation in a 2 to 3 m³ volume
- Spring-loaded system for efficient balance in the area covered by the slave arm
- Light, robust manipulator, straightforward to operate
- Protective sleeve mounted on BE 22 cell ring

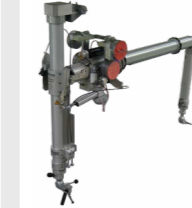


PT 236
Rod Handle with 5° of freedom (Straight Tongs)

- Suitable for glove boxes with a depth of 500 to 1000 mm
- Maximum manipulation capacity 5 to 10 kg
- Mounted on swivel joints, 14 mm diameter thru-tube
- Optional leaktight booting mounted on ejectable ring

A specifically adapted and optimized articulation drawing as well as the radioprotection calculations for the parts of the remote manipulator can be supplied for each of our remote manipulators, on demand, during the design / engineering phase.

* manufacturer's test value



MT 120
A Master - Slave Manipulator with telescopic arms

- Supplied in short, medium, long and extra-long lengths
- Nominal load capacity: 12 daN*
- Designed for work in medium size cells

- Two versions:
 - Non-disconnectable in continuous kinematics
 - Disconnectable in 2 parts : Master Arm and Through-Tube/ Slave Arm sub-assembly
- Two thru-tube diameter versions:
 - ø 190,5 (7.5') with BE CC cell ring
 - ø 254 (10') with BE 88 cell ring
- Major motions (X et Y) equipped with electrical offset
- Three mechanical brakes, with controls located at the base of the master arm, block movement of the master arm
- The gripping motion brake is actuated by a control integrated in the handle
- MT 120 Lifting capacity at hook : 30 kg



MT 200
A Master - Slave Manipulator with telescopic, disconnectable slave arm

- Several lengths available for both master and slave arms
- Maximum load capacity: 20 daN*
- Designed for work in medium and large size cells

- Can be configured and adapted to varying cell dimensions
- The slave arm can be remotely disconnected from the thru-tube
- Containment is provided by a sleeve (single or double) or leaktight thru-tube depending on requirements
- The thru-tube integrates radiation protection
- Major motions (X, Y and Z) are equipped with electrical offset for better operator comfort and to increase the working range
- Three mechanical brakes, with controls located at the base of the master arm, block movement of the master arm
- The gripping motion brake is activated by a control integrated in the handle
- MT 200 Lifting capacity at hook : 80 kg