LACALHENE

DPTE®
Transfer System

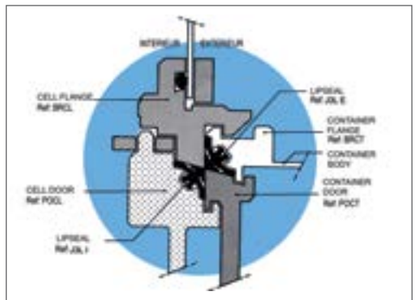
Transfer materials without
breaking containment

The DPTE® transfer system: Secure connection between two volumes

La Calhène, the creator of the DPTE® transfer system
In 1963, La Calhène developed the first DPTE® «Double Door for Leaktight Transfer *(Double Porte de Transfert Etanche)*» transfer system. Continuously improved and used for multiple applications, the DPTE® is the market reference.

With more than 30 000 systems in use around the world, the DPTE® is the industry standard for transfers requiring containment. Our engineering office can design specific solutions for your project.

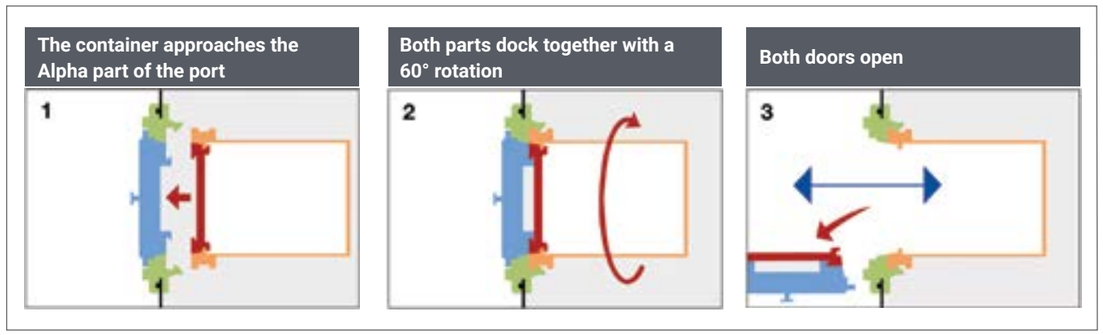
The DPTE® system: an ingenious operating principle
First and foremost a method to p f two complementary units,
the « Alpha » and the « Beta », with mechanical safety locks and opposing seals.



DPTE® seals - connecting principle

DPTE® 270 on steel container - example of use

Functioning Principle:
The Alpha and Beta parts join together to form a single unit when they are connected by a 60 degree rotation. At the same time, both doors are detached from their respective flanges and fixed together, while the seals continue to maintain leaktightness of the new connected assembly.



DPTE®, double door for leaktight transfer: Security and Reliability

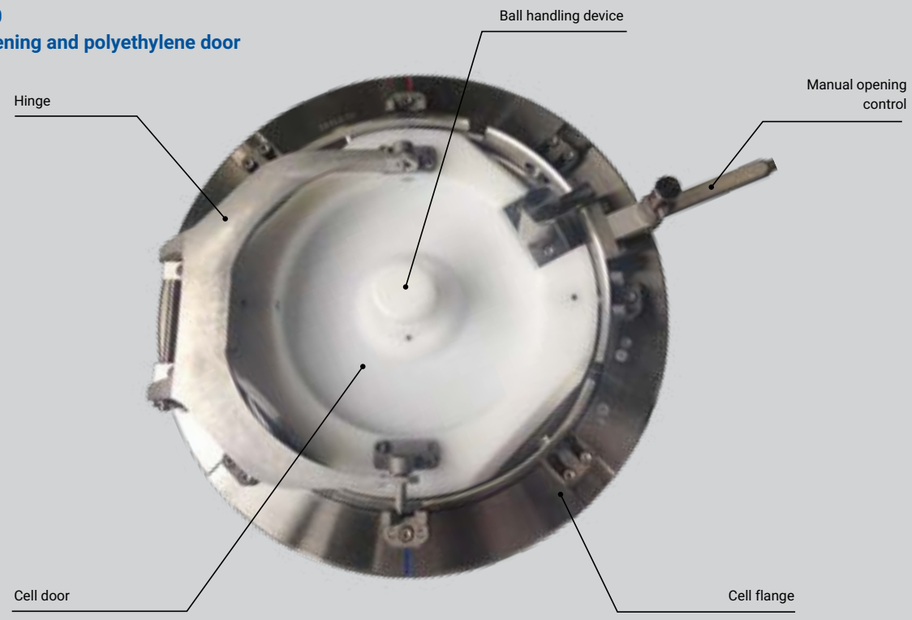
The DPTE® design is perfectly adapted to the nuclear environment:
- Containment maintained at all times.
- Unlimited lifetime for the fixed parts (not including seals which can be replaced without breaking containment).
- Maintenance operations only on removable parts (by remote manipulators or gloves, depending on the type of cell).

A wide range adapted to many requirements:
- **Size*:** 105, 190, 270 and 350 mm diameter.
- **Material:** Cell door is stainless steel or polyethylene. Cell flange is stainless steel.
- **Grip system:**
  gripping ball (manual opening),
  gripping square (for remote manipulator opening),
  or gripping device (for remote manipulator opening).
- **Locking / unlocking system:**
  manual or automatic (pneumatic actuator or electric).

* Contact us for non-standard sizes.

DPTE® 270/105 concentric
with pneumatic actuator and gripping device.

DPTE® 270
hinged opening and polyethylene door



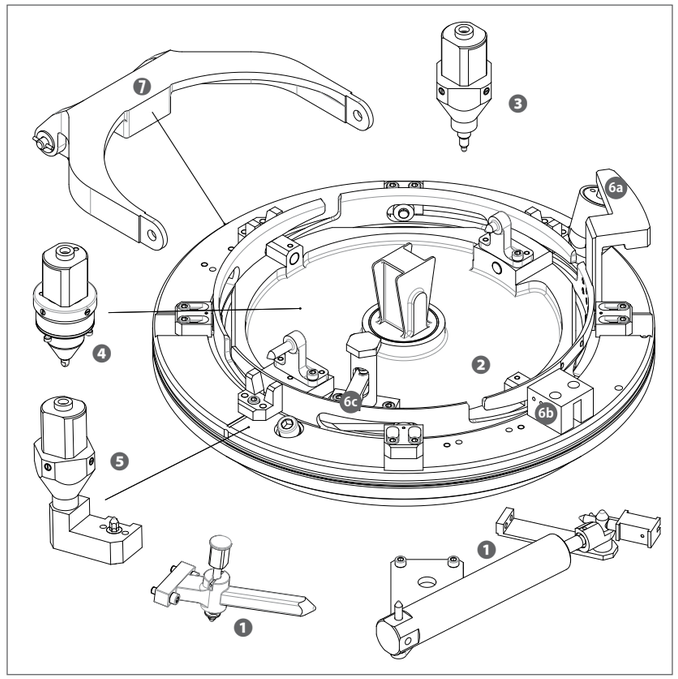
Accessories: a wide range for all applications

Alpha parts:

1. Locking/Unlocking: manual, pneumatic or electric.
2. Cell door equipped with gripping ball or manipulator arm handling device (stainless steel or polyethylene).
3. Container locking detector.
4. Container presence detector.
5. Cell door closure detector.

Mechanical security devices (locking).

6a. Container flange locking.
6b. Interlock - cell door open.
6c. Interlock - container door present.
7. Hinge.



Beta accessories:

Container for restricted re-use*
(mainly used for waste) polyethylene: available in 105, 270 and 350 sizes.

Reusable Container*
stainless steel: available in 105, 190, 270 and 350 sizes.

105 Container*
made of transparent PVC with stainless steel container flange.

* Length can be adapted

Accessories for mobile equipment:

Locking Key
sizes 270 and 350.

Lid for protection and handling

Connection Tunnel

The connection tunnel is used for leaktight transfer between two contained volumes.
It is a stainless steel Beta part with a metal bellows connected to a DPTE® Alpha part.

Tubing

The DPTE® BetaTubing system provides a leaktight method of extracting contaminated materials.

Connection to a DPTE® port: the tubing can remain locked onto the port without risk or be re-connected to different ports as required.
After connection to a DPTE® system, a sealed bag of the required length can be obtained by cutting the tubing after safe leaktight welding (3 strips).

The DPTE-DrumLiner®: a safe, fast, economical system for transferring, packaging and storing nuclear waste

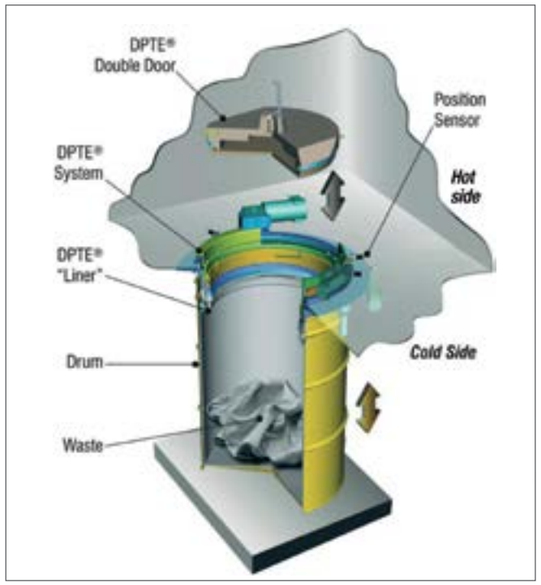
A rotating double door (DPTE®) system, diameter 270 mm for connection to a 120 litre container, or 460 mm for connection to a 200 litre (55 US gallons) container (standard oil barrel).

The DPTE-Liner® consists of a standard drum with a DPTE® container housed inside.

Advantages:
- Multiple connections / disconnections.
- Filling ratio is optimized.
- Safe transfer without loss of containment.
- Cost effective.

The DPTE-Liner® can safely be re-opened so provides a safe, long-term storage solution for nuclear sites in countries that do not yet have a long-term repository solution for intermediate level waste.

Based on the DPTE® system, it consists of:
- An automatic locking system (a manual system is available for the 270 diameter).
- A stainless steel cell flange with automatic opening, 460 or 270 diameter.
- A polyethylene or stainless steel cell door.
- An anti-rotation switch for transport and a drum positioning device.
- A security switch to avoid the cell door opening without presence of a liner and liner door.
- A security switch to avoid disconnection of the drum-liner if the double door is not completely closed.



The CEFE System a solution for large volume, wide diameter transfer applications

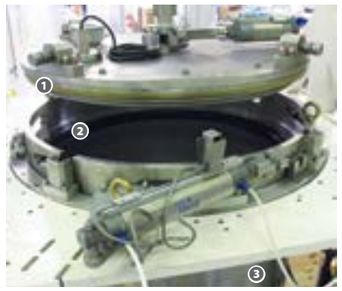
The CEFE system provides protection against α, β and γ contamination. It is mainly used for dismantling. Safe and without rotation risk, it can be serviced from inside the cell. Maximized loading rates can be achieved in this robust, large drum by waste compaction.

The CEFE system is based on the DPTE® system concept:
- Maintains containment in the cell to which it is connected.
- Guarantees leak tightness between the cell flange and the drum during docking.
- Provides leaktightness and prevents contamination during drum docking / undocking on the cell.

The CEFE is available in the following versions:

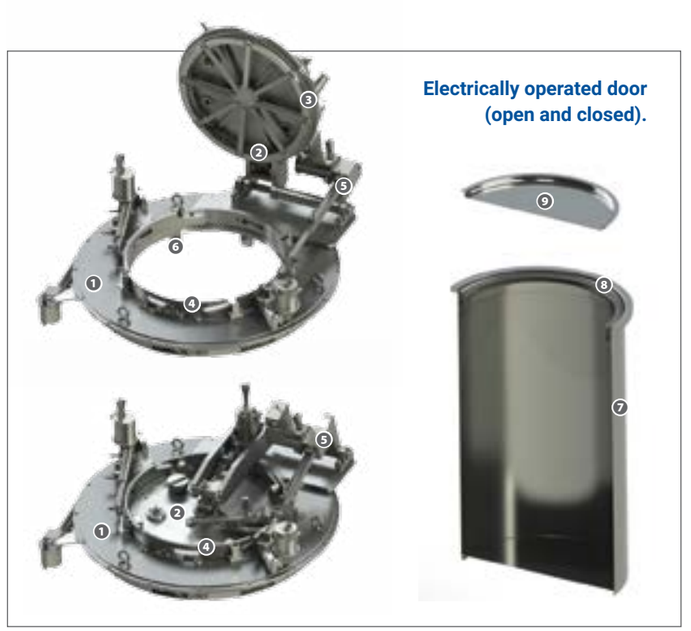
CEFE 560
- Painted steel drum, 200 litres.
- Stainless steel drum, 220 litres.

CEFE 695
- Stainless steel drum, 440 litres.



❶ J3L seal ❷ J4L seal ❸ Drum

CEFE seen from below



Description:
1. Cell flange (fixed part).
2. Cell door (electric or pneumatic).
3. J3L seal on cell door (leaktight).
4. Locking crown.
5. Door opening system - electrical version (pneumatic version available).
6. Drum locking option (cell flange).
7. Drum.
8. J4L seal on drum (leaktight).
9. Drum lid with filter.

LACALHENE

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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-BetaBags®).

La Calhène is an active member of: