

POSIJET



AUTOMATIC DISPENSING AND INFUSION SYSTEM



THE SECUREST WAY OF HANDLING FDG

The rising use of F18 but also the new coming radioisotopes such as Gallium-68 and Rubidium-82 increases the exposure of the Medical and Technical staff members. More than ever it is essential to secure staff members in charge of PET examinations.

POSIJET is an innovative process of calibration and injection of 18F Fluorine-18 (but also possible to develop a unit for other radioisotopes on request) guaranteeing an efficient radiation protection of operators (reduction radiation exposure by more than 98%). This unit is the securest infusion and injection system in the market.

POSIJET is intended to provide accurate doses of FDG to patients and contributes significantly to optimise injection procedures by offering to the operators an efficient and user-friendly way of working: This unit **automatically incomes the patient database** from the hospital Network to provide through the touch screen an instant access to daily patient injections **avoiding any manual data capture**. A manual adjustment is still possible if any information as changed when the patient is present (the weight for example) or in any case of add-on patient.

Please choose next appointment

Appointment	First name	Name
01/07/2008 12:45	Jean	HUBERT
11/06/2008 15:00	Monica	FOUCHER
11/06/2008 15:00	VELASCO	Yann
06/06/2008 19:00	Pierre	CHOPIN
04/06/2008 20:00	Jean	HUGO
12/02/2008 14:30	MC KAIN	John

06/06/2008 19:00 Pierre CHOPIN

Identification

SSID: 144109345200
 Name: Pierre CHOPIN
 Weight (Kg): 82 Actual weight(kg): 82
 Birth date: 04/05/1952 Gender: Male

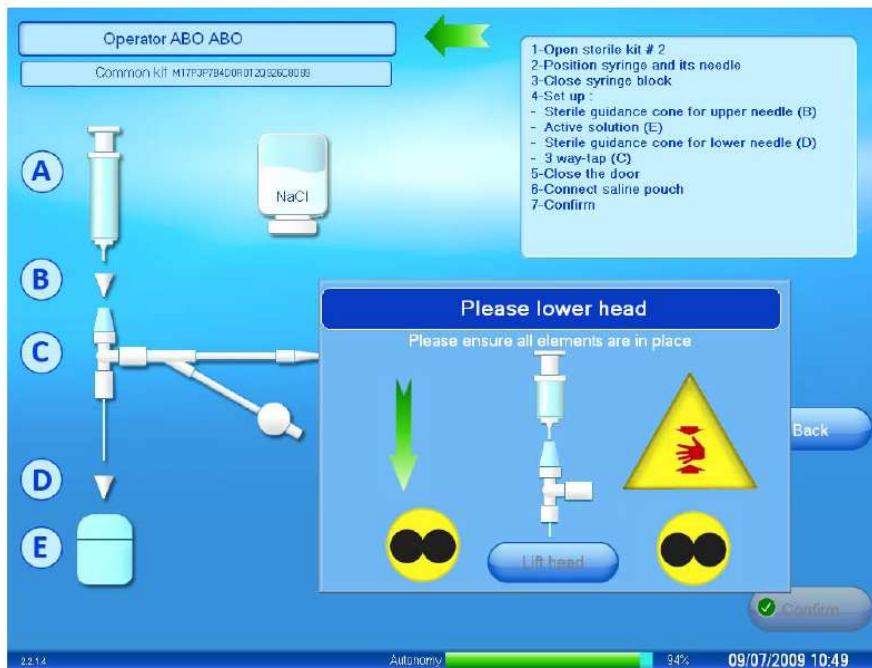
Prescription

Prescriber: DR DURAND Exam. Code: HEART
 Examination: 06/06/2008 19:00 Isotope: Technetium
 Prescribed activity per Kg: 5.49 MBq/Kg 0.1483 mCi/Kg
 Actual activity per Kg: 5.49 MBq/Kg 0.1483 mCi/Kg

Prescribed activity: 450.00 MBq
 12.1622 mCi
 Actual activity: 450.00 MBq
 12.1622 mCi

Adjust

To use the POSIJET, no special training is needed, the operator only has to follow the steps indicated by the software to get to preparation and injection of FDG



POSIJET gets automatically the dose of FDG from the multidose vial into the measuring syringe. The required dose is based on patient weight (patient database). The dose calibrator has a capacity to measure a range of activity from 15 kBq to 300 GBq with an accuracy of $\leq 2\%$. Each dose is simultaneously diluted with saline solution and measured continuously prior to injection.

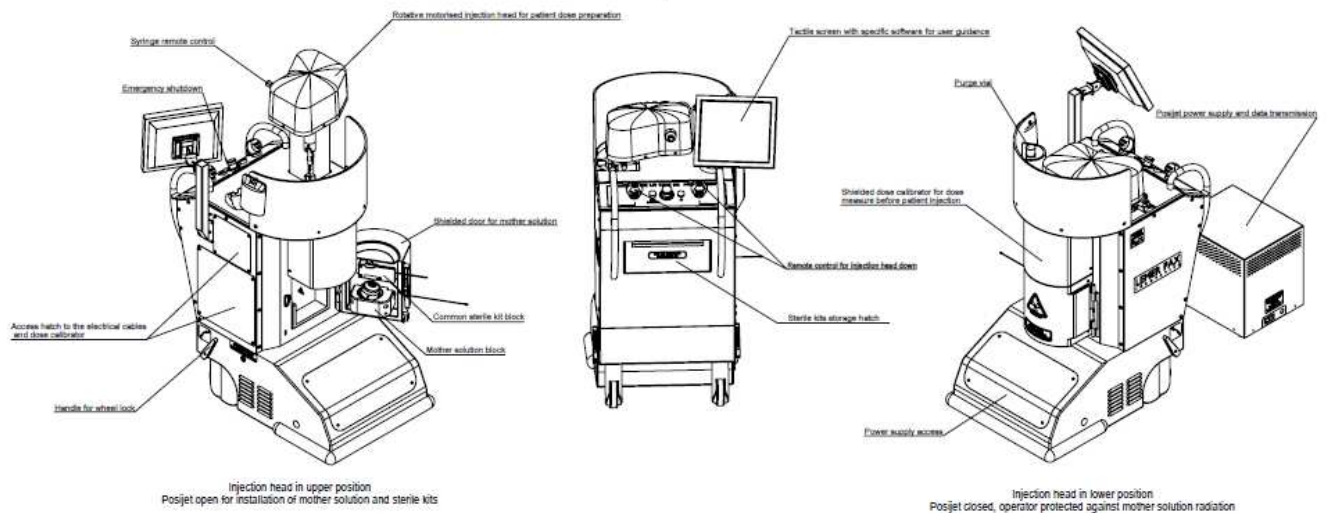
The operator is still in control of the injection. The system prepares the dose and the operator performs the injection by using the syringe remote control.



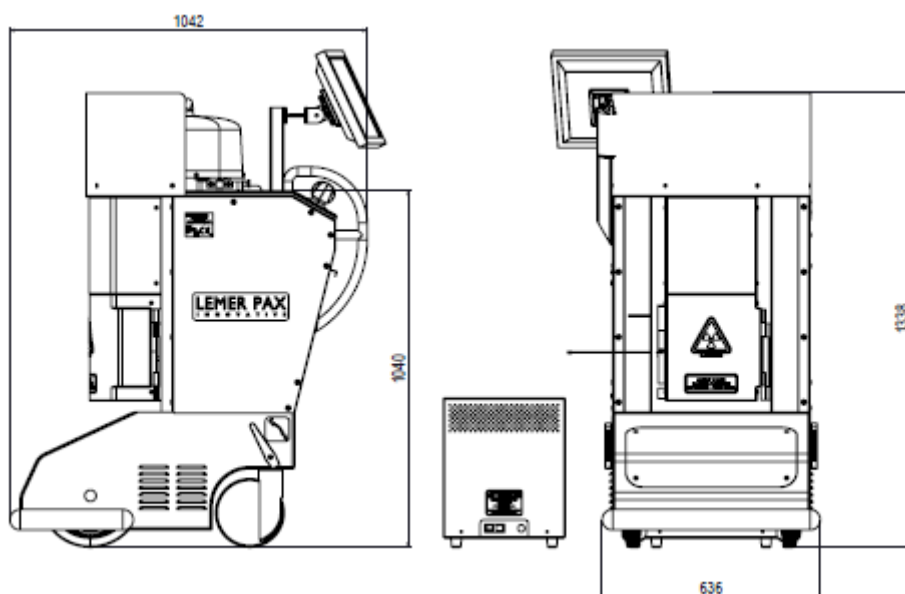
The system automatically generates and saves the patient and QC report either in the hospital patient database (data backup) or by printing it for a complete traceability.

POSIJET rechargeable batteries provide sufficient power to ensure an autonomy of over 12 hours unplugged. Operators can use it as a complete mobile unit during the all day for an easy transfer from the hot lab to the injection rooms and also during the patient's injection.

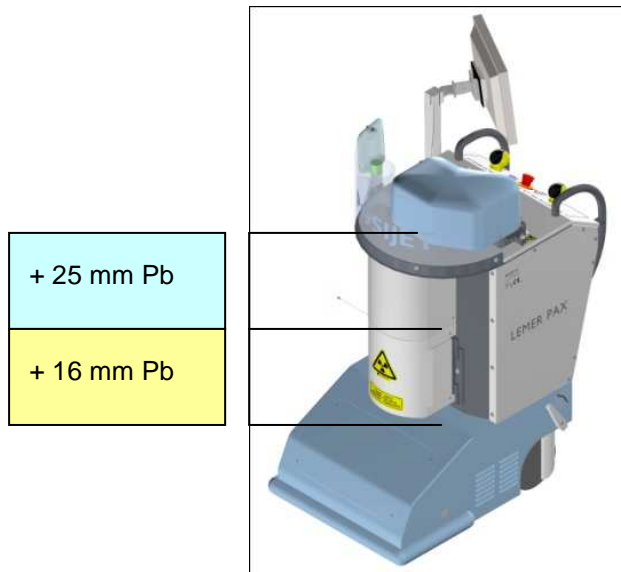
Description:



Dimensions:

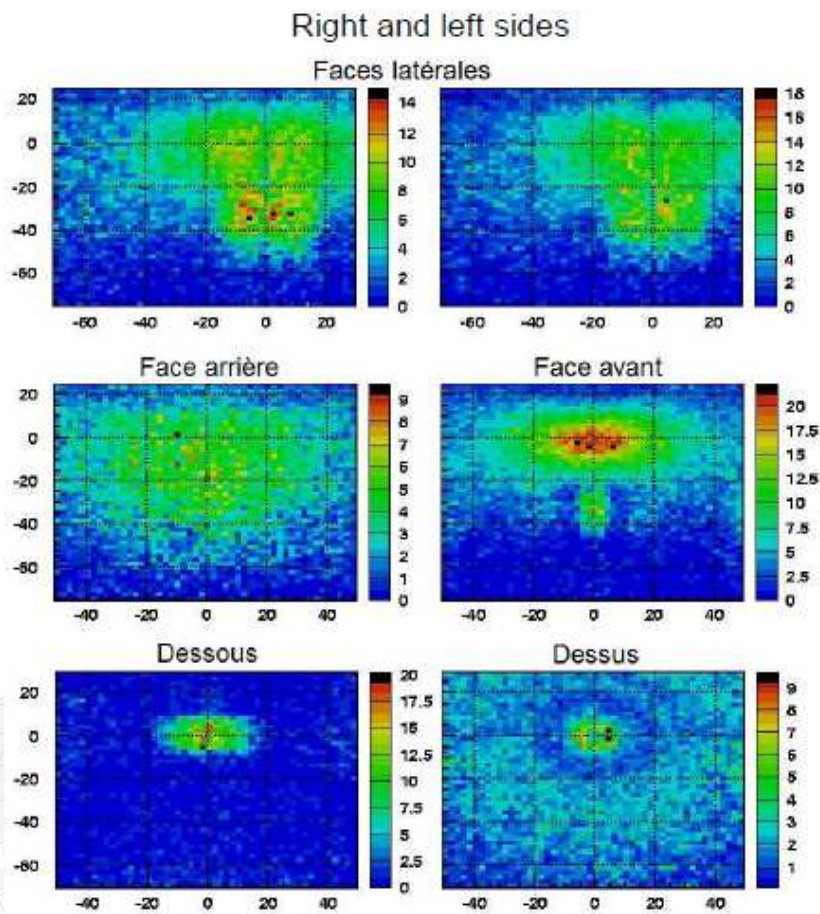


Shielding 2 mm all around + added shielding in measuring and multidose part :

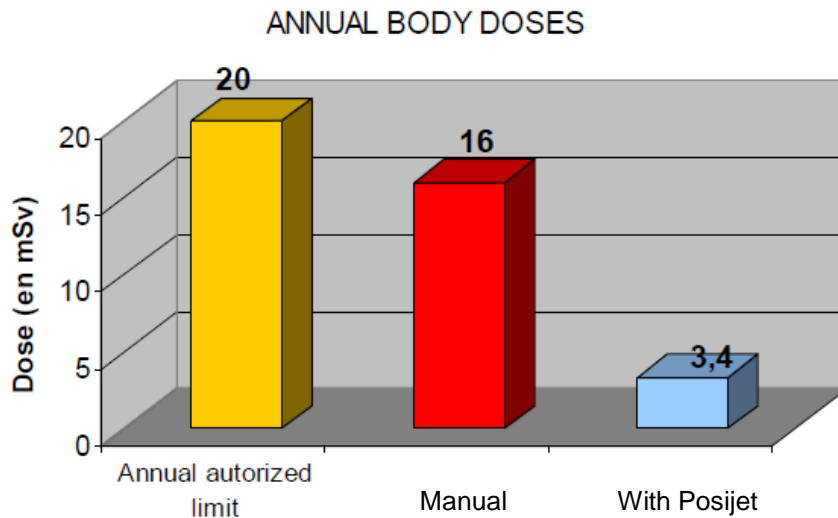


Example: 2mm + 16mm + 30mm vial container = a protection of 48mm of lead

DOSE RATE STUDY MADE WITH AN ACTIVITY OF 1000 mCi of FDG: The result shows a dose rate less than 25 μ Sv/hr



Dose rates at 5 cm from the external walls



Text relating to the prevention of the risk of exhibition in ionising radiance. Art. R. 231-76 I & II

"The sum of doses accepted by external and internal exposure should not overtake 20 mSv on 12 consecutive months.

The borders of equivalent doses for the different displayed parts of the body are the following:

For the hands, forearms, feet and ankles, the exposure accepted over 12 consecutive months should not overtake 500 mSv.

For the skin, the exposure accepted over 12 consecutive months should not overtake 500 mSv.

For the crystalline lens, the exposure accepted over 12 consecutive months should not overtake 150 mSv."

Technical specifications:

Dimensions over all	60 x 95 x 160 cm
Weight	380 kg
Maximum radioactivity	2 Ci for shielding effectiveness
Use	Monodose and Multidose
Vial containers	Compliant with main market containers

Dose protection profile <25 µSv/hr at 5 cm from the surface of the cart at maximum activity

<5 µSv/hr at 10cm from the surface at 700mCi

CE Marking CE 0398 Class 2B

ANSWERS TO QUESTIONS OFTEN ASKED

	POSIJET infusion system
Shield dimensions	wide 60 cm x deep 95 cm x high 133 cm
Weight	380 kg
Autonomy	Autonomy of over 12 hours on batteries
Injection	The POSIJET exists on both versions : automatic or manual
Contraindications	No specific contraindications
Flexibility	Compliant with all FDG main market containers
Maximum activity for 1 VIAL for shielding effectiveness	2 000 mCi MAX
Number of injections with 1 VIAL (on a basis of 300 MBq per patient and one patient every 20 mn)	27 injections per vial
Average operator time needed for 1 patient injection	7 mn
Operators needed for the injections during the year to comply with the annual dosimetry of < 20 mSv/year (calculated on a basis of 1 vial at it MAX activity per day)	1
Dose accuracy	Ability to deliver FDG within $\pm 2\%$ of the measured dose And within $\pm 5\%$ of the prescribed dose
Dose rate (in conformity with the Controlled Zone Regulation on Nuclear Medicine access that limits the dose rate of 25 μ Sv/h at 5cm from the surface of the cart)	less than 25 μ Sv/hr (up to 2 Ci)
Patient Data : Possibility to get connected to the Hospital Network to acquire daily patient database	Yes
Database backup	Possibility to send back daily patient database through Network and possibility to print it also
CE Marking	CE Marking Medical Device Class 2 B in compliance with the European Regulation (3.2 - 11)