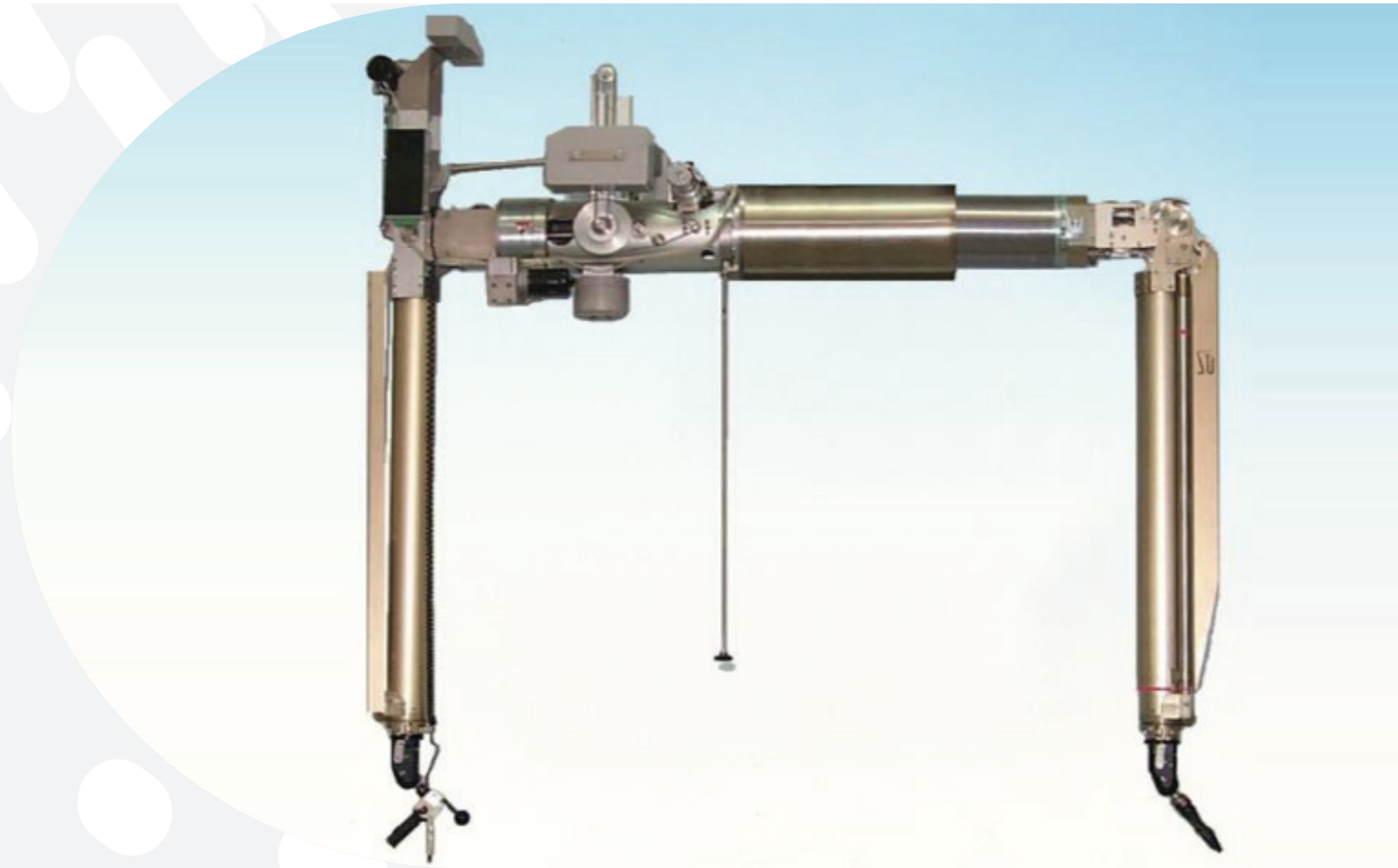
NUVIATECH AUTOMATION

SPECIFICATION SHEET

NuMantis

Advanced Master Slave Manipulator



Based on decades of experience in the nuclear industry, NUVIATech Automation has developed its advanced modular Master-Slave Manipulator (MSM) NuMantis. NuMantis is capable of handling hazardous materials in shielded containments, such as hot cells.

NuMantis is an advanced MSM that augments the operator's effort thanks to mechanically balanced connections. It can operate with objects weighing up to 20 kg. This remotely controlled manipulator can be adapted and easily assembled in various locations, thanks to its 4 part modular design.

Benefits

- High remote control precision
- Easy maintenance
- It can be equipped with a protective sleeve with tight rotative connection
- Thanks to its 4 modules, NuMantis can be completely disconnected and various parts can be supplied independently
- The removal of the master arm is possible without dismantling the slave part

Key figures

20 kg

➥ *Handling capacity in all directions*

10 inches

➥ *Fit with 10 inches penetration*

1.95 m

➥ *Sphere reachable area*

Ref : UK_NTI_2023 // 375132-06 // Errors excepted. Technical changes reserved.

Product Description

The NuMantis Master slave arm is designed with four modules. The first module is the master arm, used by the operator in a safe working area, allowing transfer of the controlled operation to the slave part. The second module is a counterweight module, helping to reduce the impact of the arm weight on the operator. The third module is the penetration, permitting the transmission of the mechanical efforts from the master arm to the slave arm through a shielded cylinder, through a standard 10 inch wall penetration. The fourth module is the slave arm equipped with a pincer, reproducing all the movement defined by the operator. The slave arm can be equipped with an electrical Z movement helping to manage distant material in a hot cell but keeping good operating conditions for the user.

Product Specifications

- Power supply in low voltage 24V
- Pincer opening : 90 mm
- Pincer rotation : ± 360°
- Pincer Elevation: +25° -120°
- Arm Rotation:..... ± 180°
- X Rotation :..... ± 30° Electrical ± 60° Manual (in the axis of the penetration)
- Y Movement: +90° -20° (Elevation in the shoulder axis)
- Z movement: Manual Telescop E1 + Electrical telescop E2
- Extantion up to 1950 mm
- Salve Arm weight: 31 kg
- Master arm weight : 49 kg
- Penetration connection: 62 kg
- Master arm and counter weight modules : 230 kg

Performance Characteristics

- Sensitive arm for precise operations in a hot cell
- Easy to implement in standard 10inches penetration
- Ability to maintain and support heavy manipulators or electrical manipulators
- Range of arm extension is covering a large volume of intervention

Product Applications

- NuMantis is designed to operate in highly radioactive and contaminated shielded areas by qualified personnel.
- NuMantis is used in a variety of hot cell applications, including at research laboratories, to undertake hot cell process operation and maintenance at nuclear sites, or dismantling and waste handling activities in a hot cell. NuMantis is also used for the routine maintenance of power manipulators, such as NuCondor, and electrical manipulators, such as NuPython, to deliver fully remote operation and maintenance for these remote techniques.
- Training for maintenance and operation can be provided, for example : Operational training from simple manipulation to cutting and sorting operations in hot cell.
- NuMantis are currently in operation in EDF LIDEC in Chinon (France), in IRE in Fleurus (Belgium).