

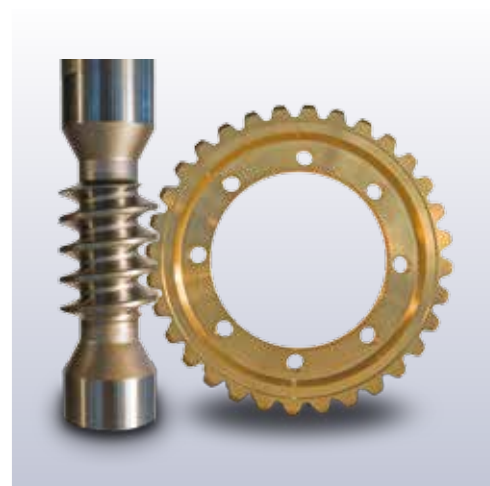
**WÄLISCHMILLER**  
Quality for Safety.



# WÄLISCHMILLER ENGINEERING GMBH

## CUTTING-EDGE TECHNOLOGY WITH TRADITION





## QUALITY FOR SAFETY



Wälischmiller Engineering is a specialist manufacturer of remote-handling and robotics solutions for over 60 years for environments that are inaccessible to humans.

The need to ensure the highest levels of safety in these environments means that all our products are designed and manufactured to the strictest quality criteria. Our focus on product quality and operational safety marks us out as one of the world leaders in the market. Our company slogan influences us every day and in everything we do: Quality for Safety.

At Wälischmiller Engineering, we take pride in offering turnkey solutions. We provide a fully integrated service that extends from planning and product development all the way to manufacturing and installation.

By working closely with our specialist engineers and project managers, you can be confident of receiving not just an off-the-shelf product, but a bespoke solution to your problems that offers the highest quality and a guarantee of long-term operational safety and efficiency for your staff.

Our quality management system has been certified to DIN EN ISO 9001:2008 and to KTA 1401 safety standard of the Nuclear Safety Standards Commission. Our environmental management system is certified according to ISO 14001:2015. Our robotic system TELBOT® is certified according to ATEX category 1/ zone 0.



We are certified acc. to  
ISO 9001:2008  
ISO 14001:2015

INNOVATION  
TRADITION  
INTERNATIONALITY

Hans Wälischmiller opens his new business in Meersburg, Germany  
1946

The company enters the nuclear medicine and nuclear technology markets after being awarded a contract to design and manufacture a system for transferring, distributing and packing radioactive Sr90  
1950

The head office and production are relocated to Markdorf  
1962

Delivery of the first A100 master-slave manipulators to the Research Centre at Karlsruhe in Germany  
1963

Delivery of the first A200 master-slave manipulators to the Research Centre at Jülich in Germany  
1966

Development of the A1000 power manipulator for remote handling of heavy loads  
1979

Delivery of the first TELBOT® handling robot to AECL Atomic Energy in Canada  
1990

The "blue hall" with a height of 15 meters and a water pool with a depth of 5 meters are completed in Markdorf. The facilities are used for product assembly and testing.  
1995



# PRODUCTS AND SOLUTIONS

## FOR THE NUCLEAR AND OIL & GAS INDUSTRIES

### REMOTE HANDLING SYSTEMS

Our handling systems offer various mechanical master-slave manipulators for a wide range of applications. Our models A100 and A200 series are successfully employed in Sellafield, Cadarache and Chernobyl. Other products include remote-controlled power manipulators from the A1000 series for handling heavy loads.

Our special TELBOT® robot is a multi-functional, modular and automatic system with unique capabilities which includes unlimited rotation in all axes, no wiring inside or outside the TELBOT® arm and unlimited fast and precise movement. TELBOT® systems have been successfully employed in Rokkasho vitrification plants and for decommissioning power plants in Rheinsberg and Greifswald.

### ENGINEERING

With our extensive experience in radiation protection and the unique demands that apply to handling technology in radiation-exposed environments, we can implement complex development projects to your specifications. Our aim is to deliver optimum solutions that not only meet your requirements and expectations, but also comply with the applicable standards and regulations. Wälischmiller Engineering products stand out due to their user-friendly design, exceptional quality, functional reliability and easy maintenance. This is confirmed by satisfied customers in more than 40 countries worldwide.

Hans Wälischmiller GmbH is acquired by Carr's Group Plc of Carlisle (UK) and is renamed Wälischmiller Engineering GmbH  
2009

Delivery of the first Electrical Master-Slave Manipulator A100S  
2010

Delivery of the first robotic arm A1000S for power manipulators  
2012

Development of the remote handling vehicle V1000  
2013

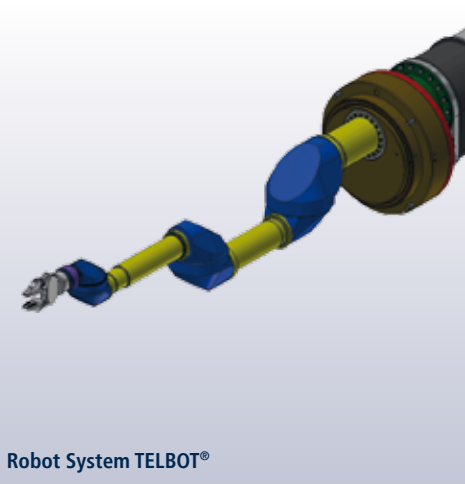
Delivery of the first Master Arm  
2014

Opening of the new office and production building in Markdorf  
2014

Delivery of the first electrical manipulator with robotic function A4000 for installation in shielding wall  
2015

Delivery of the TELBOT® ATEX category1/ zone 0 for tank inspection, cleaning and NDT  
2015

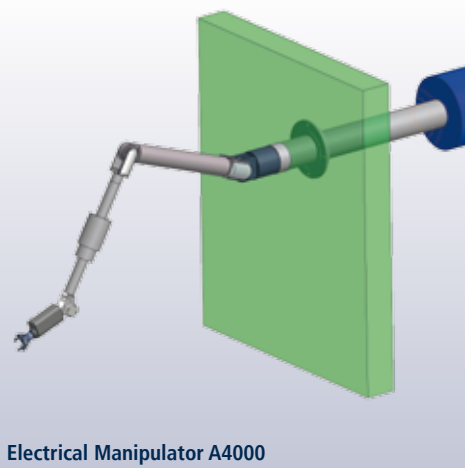




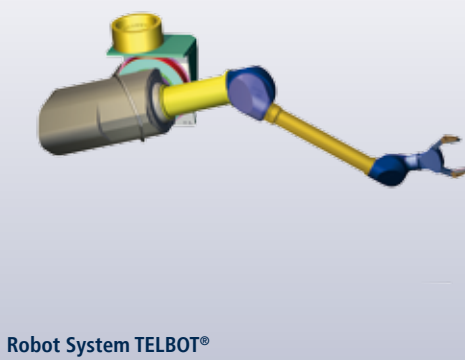
Robot System TELBOT®



## ENGINEERING



Electrical Manipulator A4000



Robot System TELBOT®

Wälischmiller is a project oriented company and has all the technical capability in-house to deliver according to the requirements of complex projects. We have a highly-skilled and experienced directly employed team with the technical capability to deliver complete equipment, which includes: design (including validation and verification), fabrication, machining, assembly, testing, inspection and installation. At Wälischmiller we take pride in offering turnkey solutions. The design department is involved in the early stage of the project. The complete design of our remote handling solutions is done by Wälischmiller in-house, including manufacturing drawings and as build end-documentation. Our vertical range of manufacture is optimized to response fast and flexible to customers' demands.

All the processes we follow are designed in accordance with our 'Quality for Safety' manufacturing and quality assurance ethos, to deliver the highest levels of quality and fitness for purpose.

Our specialist highly-trained and experienced team is fully conversant with the requirements of nuclear industry design, material and fabrication standards and technical specifications for materials used in the design and construction of remote handling equipment. Our work includes projects in the most difficult nuclear environments including Sellafield, Rokkasho and Chernobyl.

Our services include designing the layout, compiling design review documents as well as manufacturing, installing, commissioning and documenting according to KTA and ATEX.

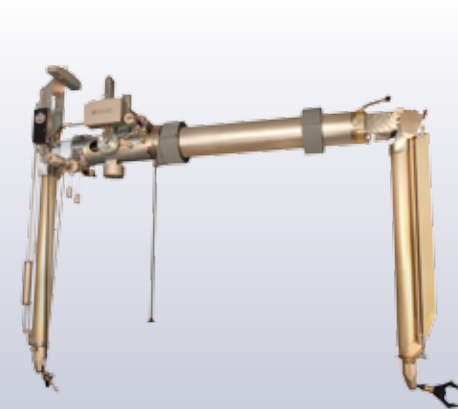




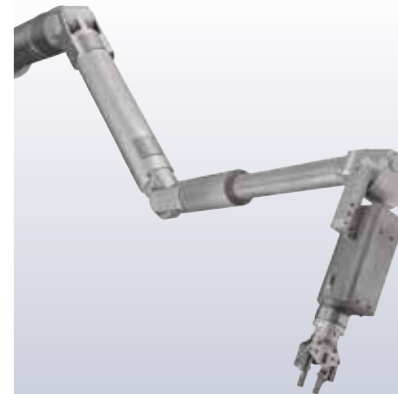


## REMOTE HANDLING SOLUTIONS

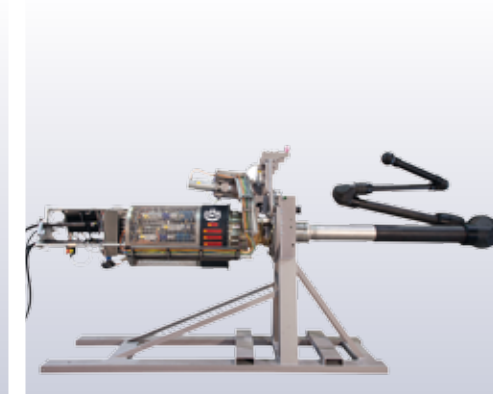
Goniophotometer with three 6 ½ feet long robots



Telescopic Master-Slave Manipulator A100



Electrical Manipulator A4000 with Robotic Function for installation in shielding wall



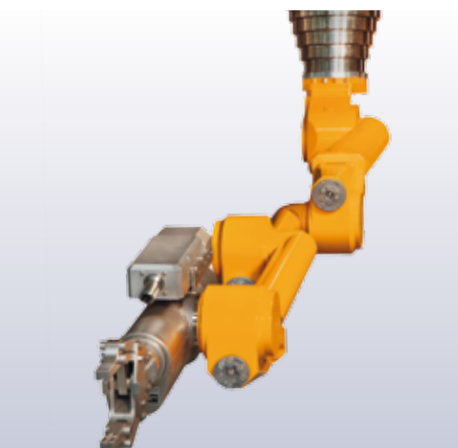
TELBOT® Certified for ATEX Category I / Zone 0



Combination of 2 TELBOT® and 1 Power Manipulator A1000



Articulated Master-Slave Manipulator A200



Power Manipulator A1000

## REMOTE-HANDLING MADE BY WÄLISCHMILLER ENGINEERING

We take pride in offering turnkey solutions. What does it mean? It means that we develop and deliver solutions to our customers based on proven technique. Doing so, we provided equipment for the most challenging decommissioning projects around the world especially in Germany, France, the UK and Japan.

Our outstanding technology is praised regularly. In 2015 the contributions of the TELBOT to the nuclear fuel cycle in Japan were awarded the Special Prize of the Japanese Society of Mechanical Engineers.

Wälischmiller Engineering demonstrated its capabilities in various industries. For the lightening industry three 6 ½ feet long robots from Wälischmiller identify in a perfectly darkened room of the PTB the directional distribution of the luminous flux of light source.

In 2015 we delivered the first TELBOT certified for ATEX category 1/ zone 0: world-wide the first available system. The manipulator is used in the oil & gas industry for cleaning, maintenance and non-destructive inspection.

Our services include designing the layout, compiling design review documents, as well as manufacturing, installing, commissioning and documenting the following products:

- Test load systems and Cross beams
- Hoists and Cranes

We offer a complete package from a single source:

- Products tailored to your requirements
- Hoists designed to KTA specifications
- Products designed and manufactured according to your requirements





Telescopic Master-Slave Manipulator A100

## MASTER-SLAVE MANIPULATORS



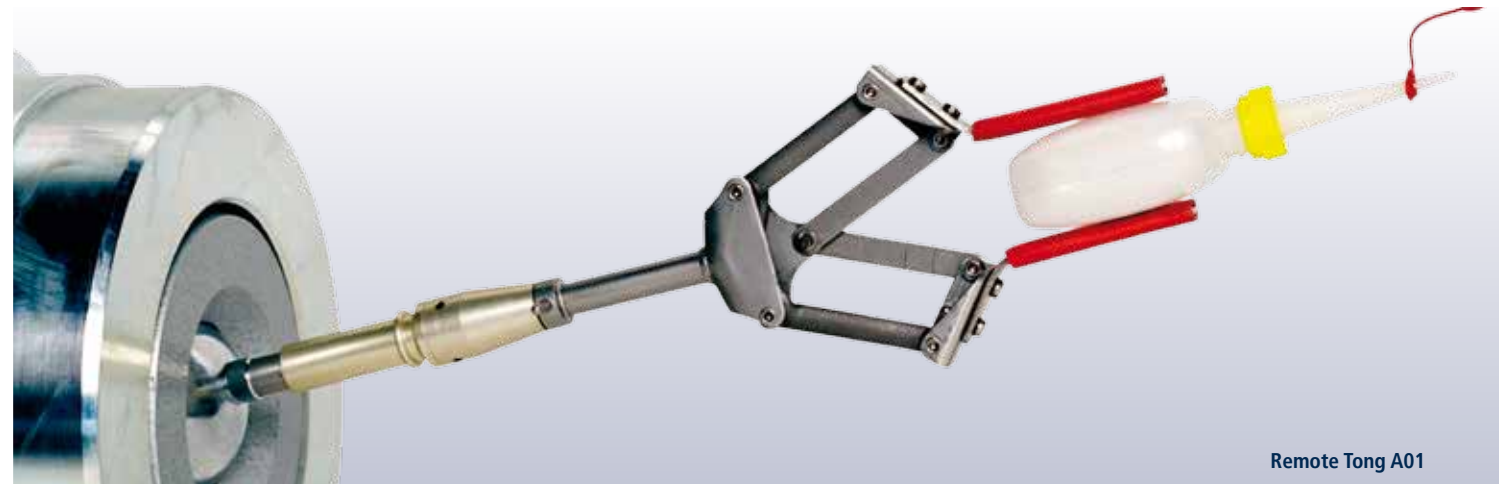
Articulated Master-Slave Manipulator A200



Master-Slave Manipulator A203



Telescopic Master-Slave Manipulator A100



Remote Tong A01

Wälischmiller Engineering has been manufacturing master-slave manipulators for use behind shielding walls since the 1950s. Since then, we have become one of the world's leading manufacturers of remote handling equipment.

Thanks to their modular design, Wälischmiller Engineering systems can be configured to perform a variety of tasks in areas inaccessible to humans.

### UNIVERSAL TONGS A01

The A01 is designed to perform simple remote handling tasks involving radioactive substances.

### MASTER-SLAVE MANIPULATOR A203

The A203 is employed in small cells and boxes, mostly in the nuclear medicine.

### ARTICULATED MASTER-SLAVE MANIPULATOR A200

This system is designed for medium-sized, lead-shielded or concrete-shielded cells.

### TELESCOPIC MASTER-SLAVE MANIPULATOR A100

These manipulators are often installed in medium-sized and large concrete-shielded hot cells. The modular manipulator transfers the master arm movements to the slave arm by means of rotating shafts inside the shielded through-wall tube. The master arm of the A100 can be replaced by a drive unit with servo motors. This can be assembled directly on the slave-arm or on the through-wall tube of the telescopic manipulator A100. The manipulator can be controlled with joysticks in a secure area with a controller and a visualisation system.

More information about Articulated Master-Slave Manipulator A200  
[www.hwm.com/products/articulated-master-slave-manipulator-a200.html](http://www.hwm.com/products/articulated-master-slave-manipulator-a200.html)







## POWER MANIPULATOR SERIES A1000

Power Manipulator A1000

The A1000 is a power manipulator with numerous applications, particularly in areas where human access is restricted and heavy-duty tasks have to be performed. Designed as a self-contained unit with electric drives, the A1000 offers convenient remote control, efficient movement and radiation resistance. We truly believe that the A1000 is a first-class solution for use in radioactive and other inaccessible environments.

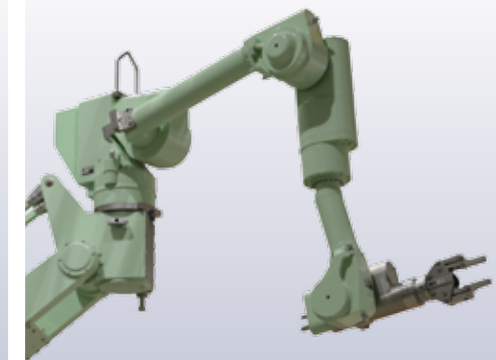
The A1000 is shaped according to the modular design principle. We can build the machine to meet your wishes and adapt the size and capabilities to your environment.



Power Manipulator A1000



Remote Control for A1000



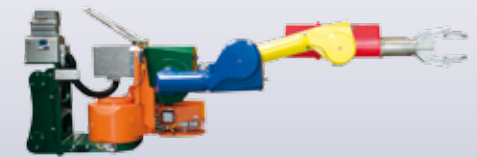
Robotic Arm A1000S



Manipulator Vehicle V1000



Electrical Manipulator A4000 with Robotic Function



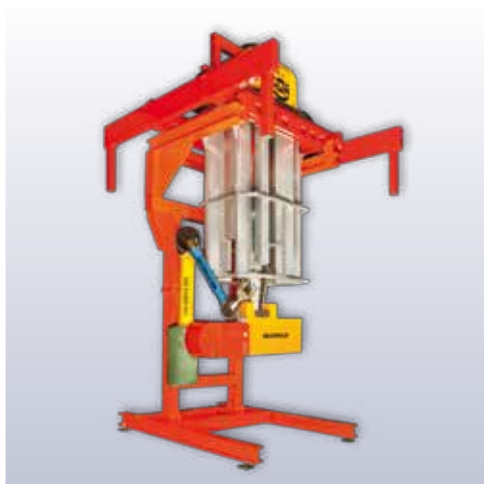
Power Manipulator Arm for Application on Excavator

More information about Power Manipulator A1000  
[www.hwm.com/products/power-manipulator-a1000.html](http://www.hwm.com/products/power-manipulator-a1000.html)





## UNLIMITED MOVEMENTS



Special tasks require a special robot – the Wälischmiller Engineering TELBOT®.

The TELBOT® is a multi-functional, modular and automatic system with unique capabilities. Arm-length, drive units and standardised modules (kinematics) can be configured to your requirements.

All electrical drives and sensors are located in the base unit. The robot's movements are transferred through the arm and joints by concentric tubular shafts and bevel gears.

## ROBOT SYSTEM TELBOT®



### MULTIFUNCTIONAL

Up to eight axes are available. The huge selection of arm lengths, joint modules, motors and gears facilitates a variety of kinematics and working ranges with handling loads of between 5 and 150 kg.

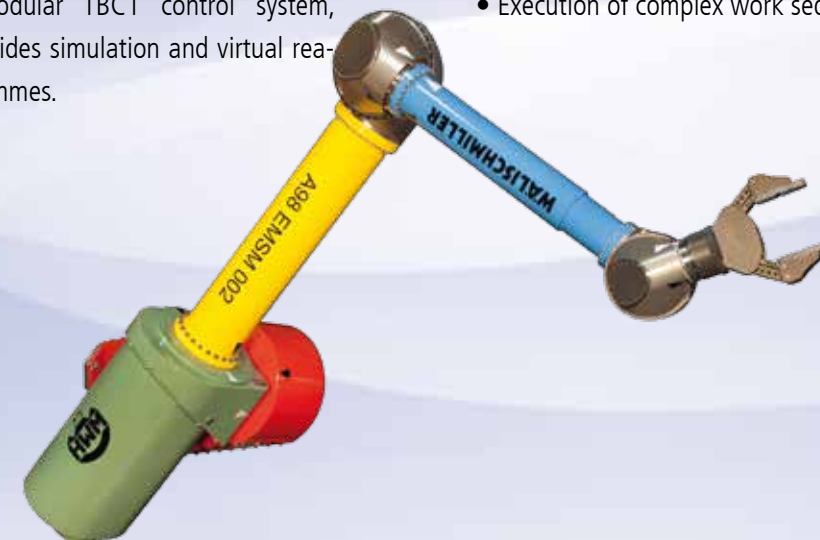
The TELBOT® arm is sleek and powerful, and offers unlimited movements.

Rounding out the TELBOT® is the open-source, modular TBC1 control system, which provides simulation and virtual reality programmes.

### SPECIFICATIONS

The TELBOT® is a multi-functional, modular and automatic system with unique capabilities:

- Unlimited rotation in all axes
- No wiring inside or outside the TELBOT® arm
- Unlimited, fast and precise arm movements
- Smooth, sealed arm and joint bodies
- High level of repetition accuracy
- Programming of sequences possible
- Precise guidance of remote handling tools
- Execution of complex work sequences



More information  
[www.hwm.com/products/robot-telbot.html](http://www.hwm.com/products/robot-telbot.html)





## VIRTUAL SIMULATION WORKPLACE



To support projects and our customers, we can conduct interactive feasibility studies for each working step and select the best manipulator for the work. All movements will be established, programmed and practiced within virtual simulation workplace. This allows savings in cost-intensive and complex construction of test rigs. Also

operating personnel can be trained in VR without taking the risk of damaging expensive remote handling equipment.

Wälischmiller Engineering already integrated virtual reality features over the last projects, this includes in particular:

- Configuration of models working range
- pre-calculation
- Multiple robots in one scenario as well as
- different tools
- Collision detection and avoidance
- Path planner
- Dynamic scenarios

## OPERATING DEVICES AND VIRTUAL REALITY

### JOYARM

The JOYARM is the combination of JOYstick and Master-ARM. With a joystick a manipulator can be moved precisely axis by axis. However, a master-arm offers a fast and intuitive way to operate the manipulator. The force-feedback and the six degrees of freedom of the Joyarm enhance intuitive and exact operation as well as quick positioning.

### MASTER ARM

The Master-Arm has at its disposal a force-feedback message on its 7-degrees of freedom. That means that the user can feel the response at the Master-Arm of what's happening on the manipulator. It is developed by Wälischmiller in order to optimise the comfort of working and guard against fatigue.

### VIRTUAL SIMULATION WORKPLACE

The virtual simulation workplace developed by Wälischmiller Engineering combines different input devices such as Master Arm, Joyarm or control panel with 3-D models of Wälischmiller manipulators in a virtual environment. We see the workplace as a tool in streamlining operations and rehearsing difficult moves and works.

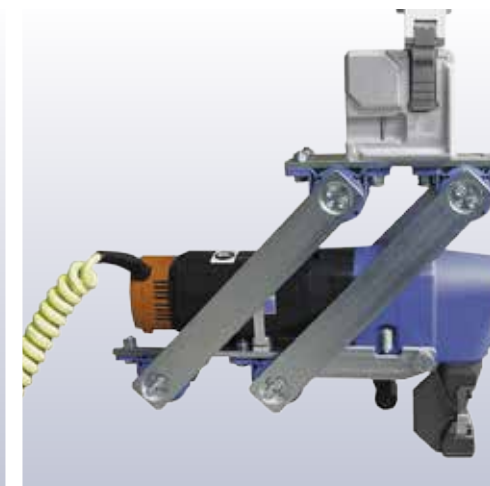
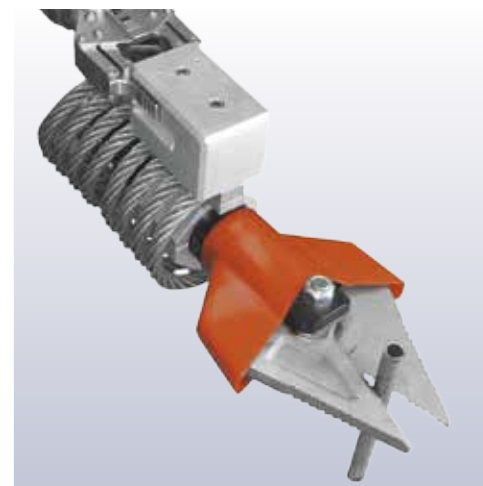
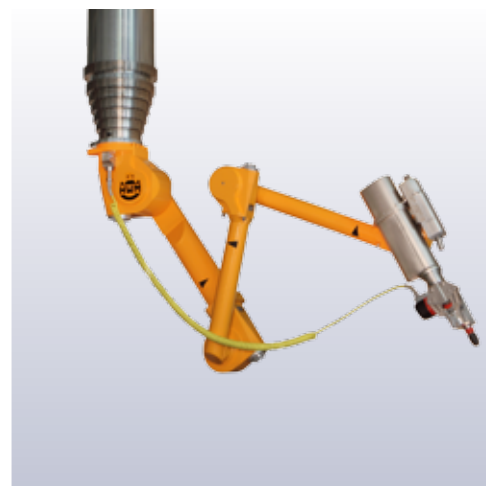


More information  
[www.hwm.com/products/robot-telbot.html](http://www.hwm.com/products/robot-telbot.html)





VERSATILE, FLEXIBLE, MODULAR.



## ACCESSORIES AND SPECIAL EQUIPMENT

In addition to the manipulators themselves, our focus on quality extends to accessories and special equipment, including:

- Protective sleeves ("booting") for contamination protection and/ or sealing in the wall and exchangeable from the cold side
- Manipulator changing carriages, transport carriages and changing devices
- Exchangeable tongs, jaws and special jaws
- Through-wall tubes, box flanges and blanking plugs
- Electric, hydraulic and manual handling tools (including nibblers, hydraulic cutters and impact wrenches)
- Three-jaw grippers and drum grippers
- Various types of camera technology are also available for monitoring in-cell work

This is just a small selection of tools and accessories for our handling equipment that we have provided to customers. We guarantee that we can find a solution for your particular requirements.







FAST, RELIABLE, PROFESSIONAL.



## SERVICES

### HIGH QUALIFICATION

Our employees play a key role in our success. The provision of on-going training and development opportunities is a top priority for us and ensures that our highly qualified specialists can offer innovative solutions to meet the frequently complex requirements of our customers.

### SERVICE

Wälischmiller Engineering also offers a complete portfolio of maintenance and repair services. All work is carried out by our in-house team of highly trained and experienced engineers. Our service personnel are also qualified to work under challenging conditions that apply in the controlled zones of nuclear facilities. They can be deployed worldwide at short notice.

### TRAINING

Our highly experienced employees can provide operation and maintenance training for all our products and this can be structured to meet your needs. If requested, we can also provide training at your premises. We offer training in numerous languages; please contact us for details.

### AFTER-SALES

We keep a large stock of spare parts for all our products and can supply them at short notice. We can usually supply within 2 working days in Europe and within 5 working days worldwide.

### ANY QUESTIONS?

#### Simply give us a call.

Our friendly advisers are happy to assist and support you.

Contact us on

**+49 (0) 7544 95 14 0**

We look forward to your call.

For more information:  
[www.hwm.com/contact/service.html](http://www.hwm.com/contact/service.html)







WELCOME AT WÄLISCHMILLER.



## CONTACT

### SERVICE & HOTLINE

#### After Sales / Training

Mrs. Ilona Jopke  
ilona.jopke@hwm.com

#### Service / Warranty

Mr. Frank Döring  
frank.doering@hwm.com

### SALES

#### Power Manipulator System A1000 / Engineering

Mr. Hubert Hafen  
hubert.hafen@hwm.com

#### Manipulator Systems A100 / A200 / A100-S / Medical Technology

Mr. Friedrich Miez  
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#### Robot System TELBOT / Japanese Market

Mr. Kenji Hara  
kenji.hara@hwm.com

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Please visit our YouTube channel



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