

TR

READY

TR READY

TECNOROBOT

RANGE PROFILE



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TR READY

Tecnorobot's TR READY series cells are a state-of-the-art solution for high production efficiency as well as simple and effective operator handling.

The standard cells feature the following top-quality components:

- > Arc Mate series Fanuc robots,
- > Cea welding unit
- > Hardware and Software safety unit
- > Fume extraction hood
- > TR Supervisor Industry 4.0 kit.

The HMI with a 15" touch screen panel provides the operator with a simple, intuitive, and effective interface for controlling the technology. Furthermore, it features graphical layouts aimed at ensuring maximum user friendliness.

In addition to the standard equipment, the TR READY robotic cell can also be integrated with **customised equipment** designed to meet the customer's specific workpiece movement and handling requirements. The PLC built into the robot, called the PMC, is connected to the field bus (Ethernet IP, Profibus, Devicenet and others). This allows for the complete management of the installed equipment by controlling the following:

- > the presence of the components via sensors
- > the opening/closing of the pneumatic locks
- > the marking system

These customised units go far beyond the basic configurations, offering advanced and sophisticated solutions to **maintain the workpiece in a precise as well as stable position** during machining.

Thanks to our experience in the industry, we are able to develop high-performance units that combine state-of-the-art technologies with innovative designs. **Every customised unit is designed according to the customer's specific requirements**, guaranteeing the necessary adaptability and ease of use.



WELDING UNIT

The welding unit is **fully integrated with the robot**. Furthermore, all the generator's functions can be managed through the robot's TP by selecting the different curves and setting the various parameters.

It is also possible to **modify the parameters in real time during the welding process thanks to the "On the Fly" function**. The machine feedback allows the user to monitor the progress of the weld and calibrate the various parameters.

There are two set-ups available: one for Mig-Mag welding, and the other for Tig welding.

The **Mig-Mag welding unit** includes:

- > Cea Digitech R generator of various powers ratings
- > Wire pulling unit mounted on the robot's third axis
- > Cooling unit for the torch
- > Welding torch
- > Set of welding processes
- > Torch cleaning unit with wire cutting equipment

The **Tig welding unit** includes:

- > Cea Matrix R generator of various power ratings
- > Cooling unit for the torch
- > Welding torch
- > Set of welding processes

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TR READY

PROCESSES

MIG | MAG



vision.
PIPE



vision.
POWER



vision.
ULTRASPEED



vision.
COLD

MIG PULSED



vision.
PULSE-UP



vision.
PULSE-RUN



vision.
PULSE-POWER



TECNOROBOT DIGITECH VP2

TECHNICAL SPECIFICATIONS		4000	5000
Power factor / cos φ		0,66/0,99	0,66/0,99
Efficiency		0,85	0,85
No-load secondary voltage	V	70	70
Adjustment range	A	10 - 400	10 - 500
Available Current at (40°)	A 100%	350	380
	A 60%	400	460
	A x %		500 (50%)

ROBOT UNIT

On the TR READY series cells, by integrating Fanuc's ARC MATE series robots, Tecnorobot is able to select and integrate the most suitable robot based on the field of work. This allows each model to reach its optimal load capacity.

With its state-of-the-art hollow wrist design, the Arc Mate series **guarantees over 90% reliability** for the cable bundle. The protection system for the torch plating, which passes through the inside of the robot's arm, minimises rotational stress, thus ensuring excellent durability.

The controller on the R30iBPlus version allows us to manage the numerous auxiliary motors required for controlling the positioners. In synergy with the Plug In Cea, the Fanuc Arc Tool software has proven to be a **powerful, intuitive and easy-to-use tool**.



> **ARC MATE 100ID**
Reach: 1441 mm
Repeatability: $\pm 0,02^*$
Load capacity: 12 Kg

> **ARC MATE 100ID/10L**
Reach: 1636 mm
Repeatability: $\pm 0,03^*$
Load capacity: 10 Kg

> **ARC MATE 100ID/8L**
Reach: 2032 mm
Repeatability: $\pm 0,03^*$
Load capacity: 8 Kg

*Based on ISO9283

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TR READY



INDUSTRY 4.0

Through the new HMI designed to guarantee an excellent UX, the operator has easy access to the functions offered by the **TR SUPERVISOR INDUSTRY 4.0** control software, designed and developed by Tecnorobot in-house:

- > Real-time machine monitoring in the field
- > Remote machine control
- > Integration with the company's production system
- > Integration with the company's logistics system
- > Precise control of the welding process
- > Recording of production data
- > Storage of process data
- > Logging of warnings and alarms
- > Integration with the "TR SERVICE" remote service unit

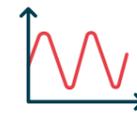
We can develop customised software packages upon request to meet specific customer requirements.



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STANDARD FUNCTIONS

TR READY



WEAVING

The pendular movement of the arm, which can be programmed by the operator, can follow sinusoidal, trapezoidal, circular, or figure-eight movements.



TORCH GUARD

The highly sensitive collision detection function protects the torch and robot against potential collisions with the equipment or the workpiece.



ARC WELDING ANALOGUE METER

The arc welding analogue meter option allows the user to monitor the welding parameters via an analogue graphic display.



TOUCH SENSING

The TOUCH SENSING probe function uses the welding wire or gas nozzle as a sensor to detect the proper position when the workpieces are out of alignment due to thermal distortion or high tolerances. The welding path is automatically recalibrated, thus eliminating the need for manual spot touch-ups.



Approved
by TUV



DCS

Dual Safety Control is an intelligent, integrated software solution that ensures operator, robot, and tool safety through specific functions, which are supported by two separate switching circuits for **double safety**.

> POSITION CHECK FUNCTION

The Position Check function reduces the cell's footprint by 50%.

> SPEED CHECK FUNCTION

The robot adjusts and controls the speed of movement based on the safety requirements.

> SAFE ZONE CHECK FUNCTION

The operator can work in close proximity to the robot, which slows down or stops based on their detected position.

> PROTECT YOUR EXPENSIVE TOOLS

The system protects the valuable tools connected to the robot.

COORDINATED MOTION PACKAGE

The Coordinated Motion package allows the robot to weld at a single welding speed, coordinated with the positioner. This function is also available on the multi-arm systems.

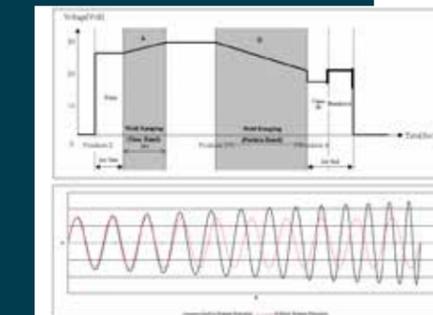
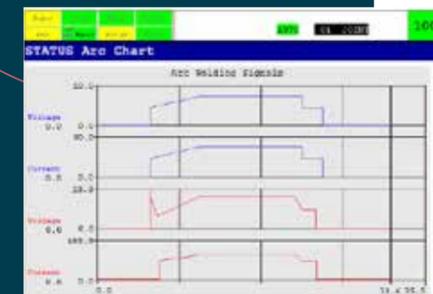
ADVICE WELDING JOB

The Advice Welding Job function allows the operator to consult the robot's welding database for reference parameters, in order to carry out optimal welding operations. **Material, thickness, joint type, welding process, and process curve** can be selected.

The operators can subsequently update or modify the parameters based on their preferences.

Wire information screen

STATUS Wire	
Current weight:	30.0 kg
1 Warning weight:	5.0 kg
2 Initial weight:	50.0 kg
3 Warning signal:	DO[1] S OFF
4 Wire Diameter:	1.200mm
5 Wire Material:	Steel
6 Wire Density:	7.850 g/cm ³
...	
[TYPE]	RESET kg/lb
HELP	



USED WIRE ESTIMATION

This function allows the operator to enter some basic data items to calculate the wire consumption. It also allows to receive an audible and visual alert when the amount of wire (remaining on the reel or in the drum) has dropped below a preset threshold.

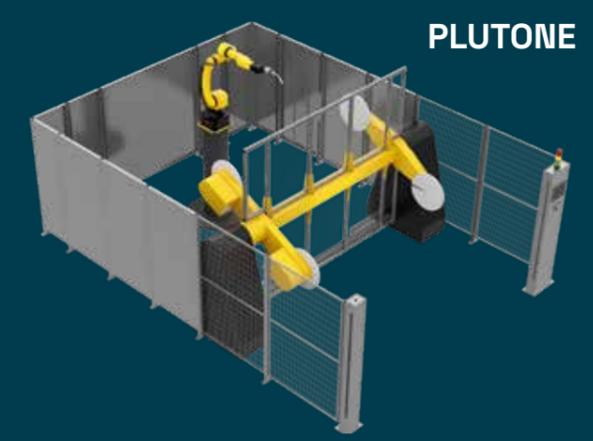
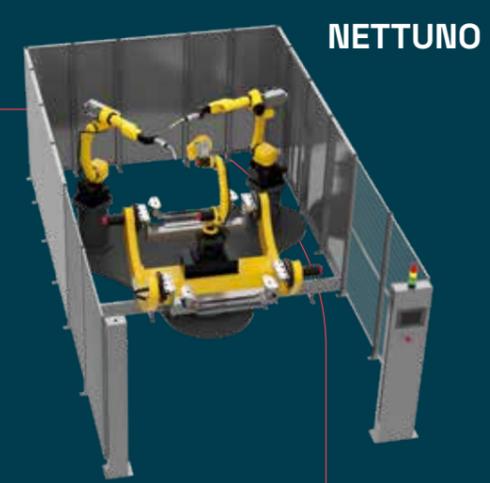
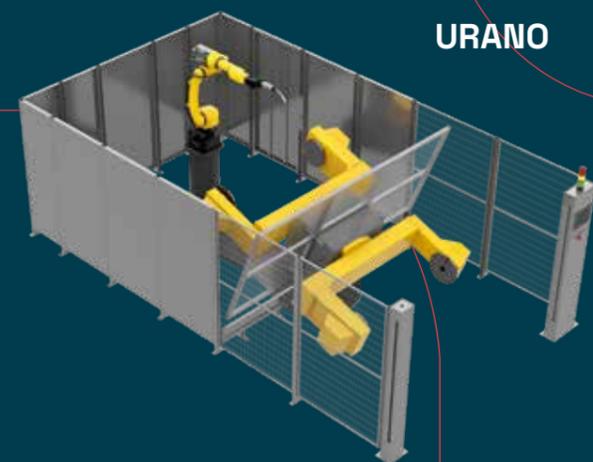
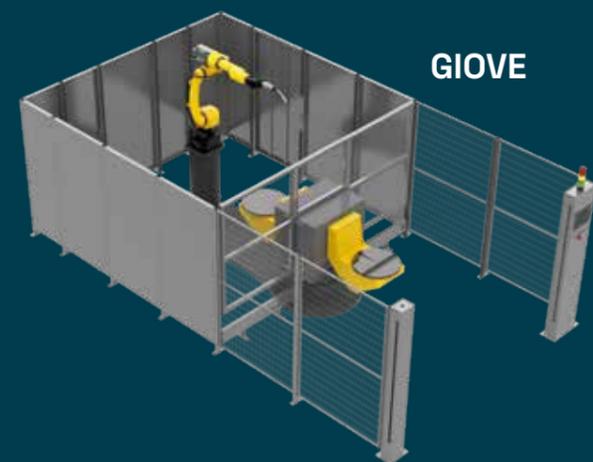
ARC CHART

The Arc Chart function displays the graphs of the welding parameters in real time. It is possible to monitor the voltage, amperage, wire speed, and exertion of the wire-pulling motor. This function simplifies the monitoring of the process status, and automatically plots the graphs during the welding operations.

PARAMETER RAMPING

The Parameter Ramping function allows the user to set up and down ramps for each welding parameter, thereby optimising the different welds based on their conformation and base material.

PRODUCT RANGE

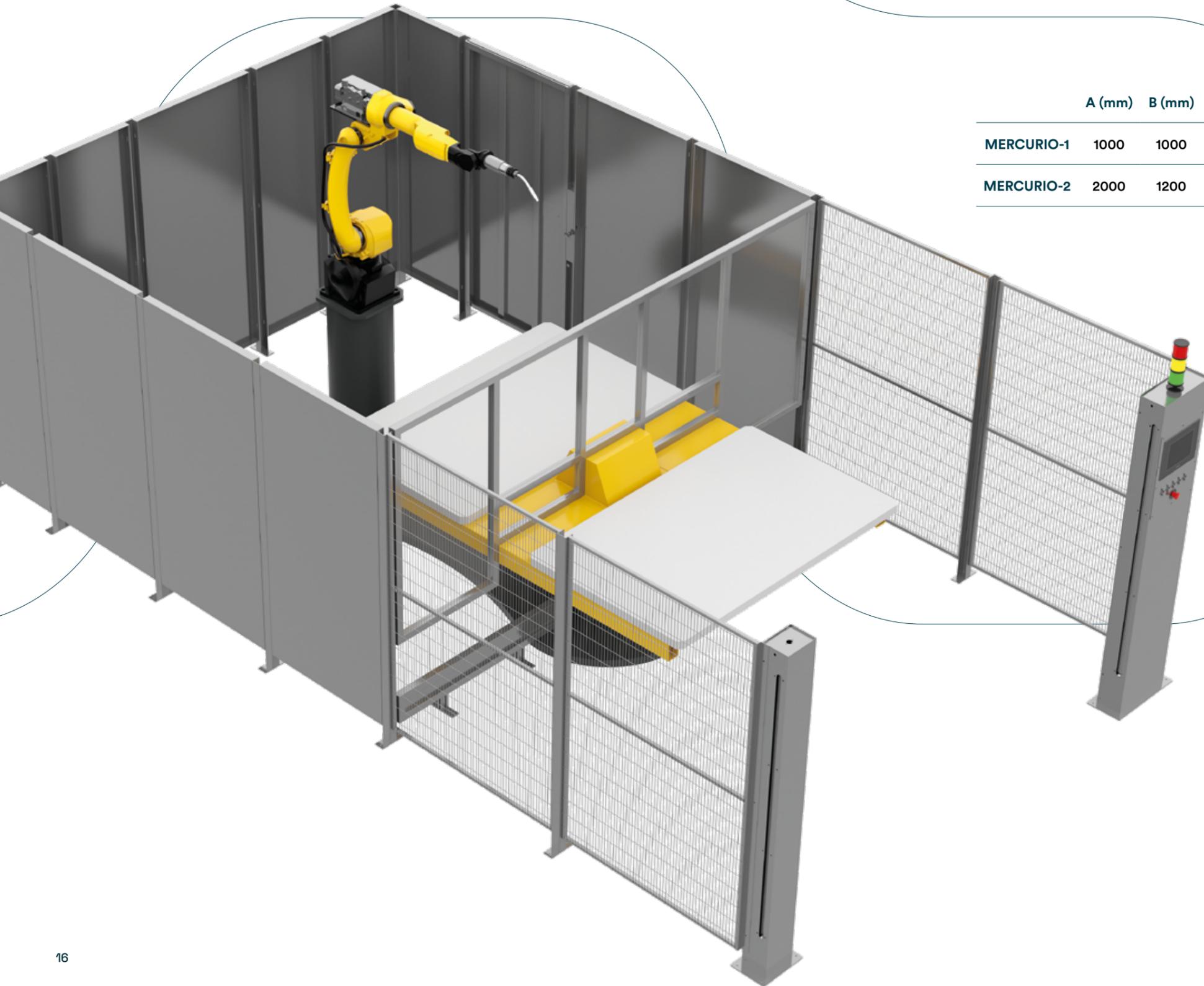


MERCURIO

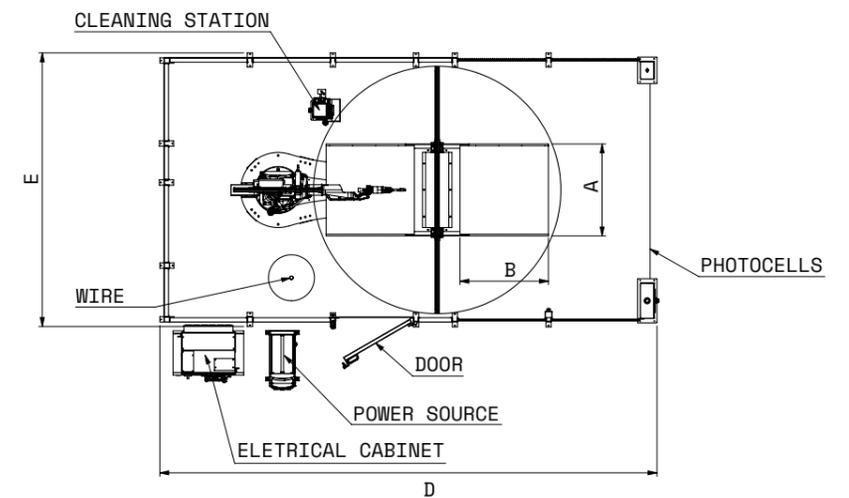
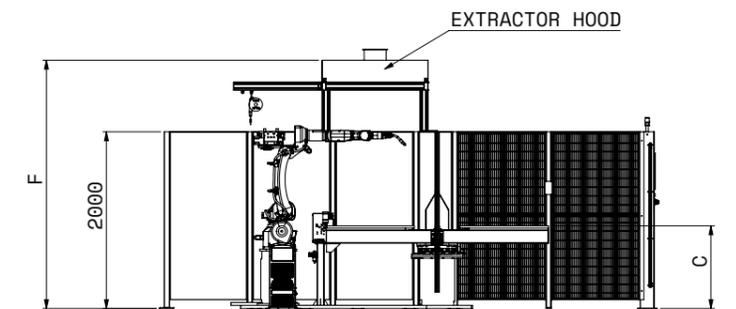
**DOUBLE TABLE
WITH STATION CHANGE-OVER ON VERTICAL AXIS**

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TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
MERCURIO-1	1000	1000	950	5800	3000	3000	—	150	AM 100 iD/ 10L
MERCURIO-2	2000	1200	950	5800	3200	3000	—	500	AM 100 iD/ 8L

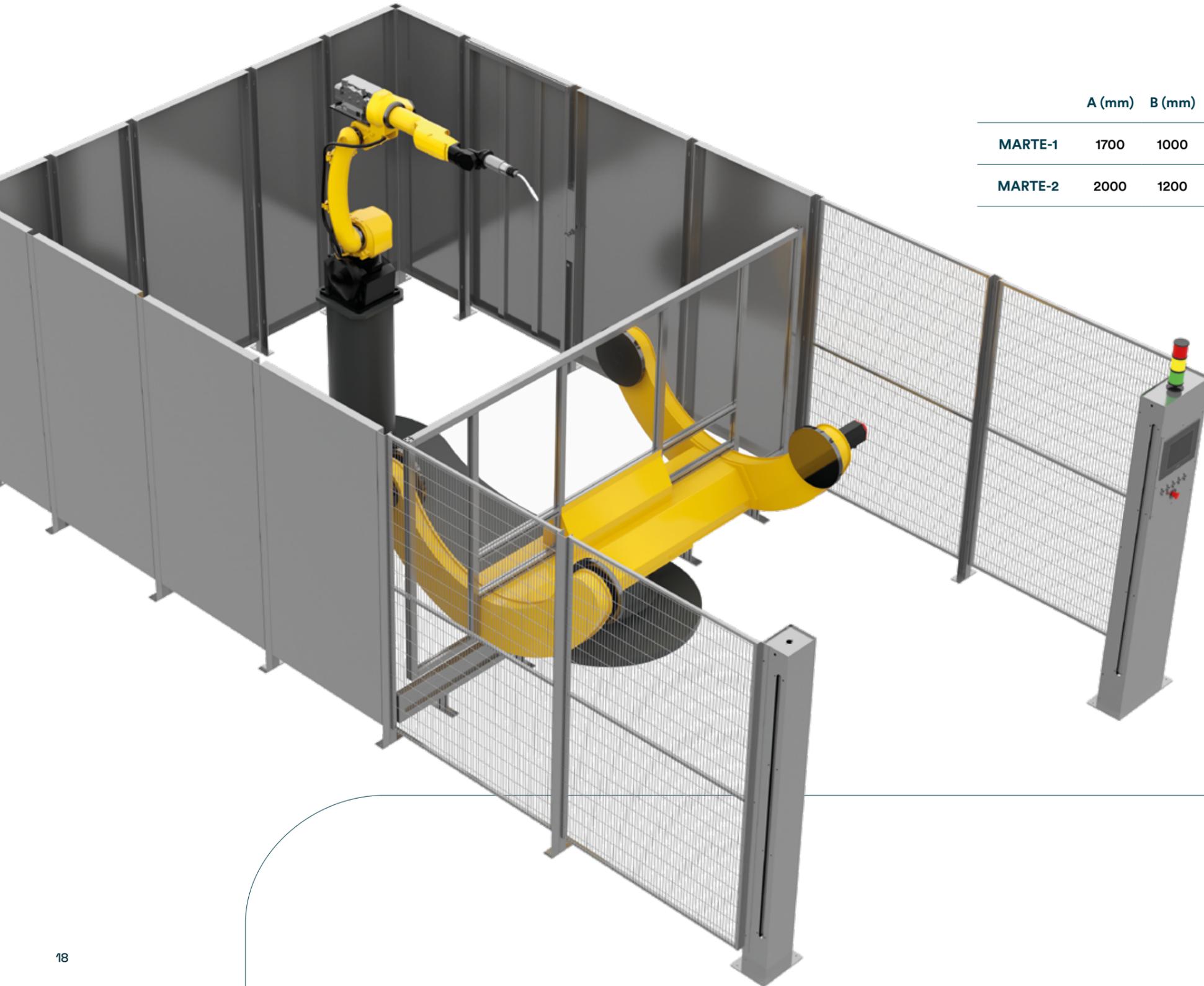


MARTE

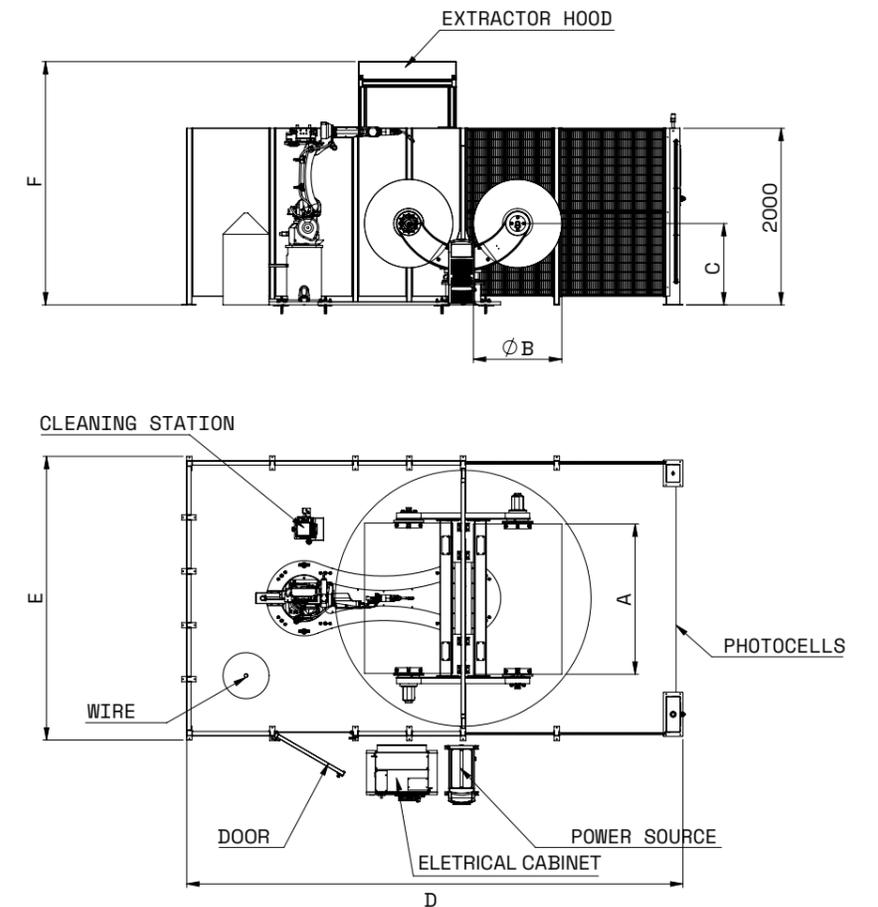
DOUBLE LATHE
WITH STATION CHANGE-OVER ON VERTICAL AXIS

TECNOROBOT

TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
MARTE-1	1700	1000	920	5500	3250	2800	—	250	AM 100 iD
MARTE-2	2000	1200	920	6200	3650	3000	—	500	AM 100 iD/ 8L

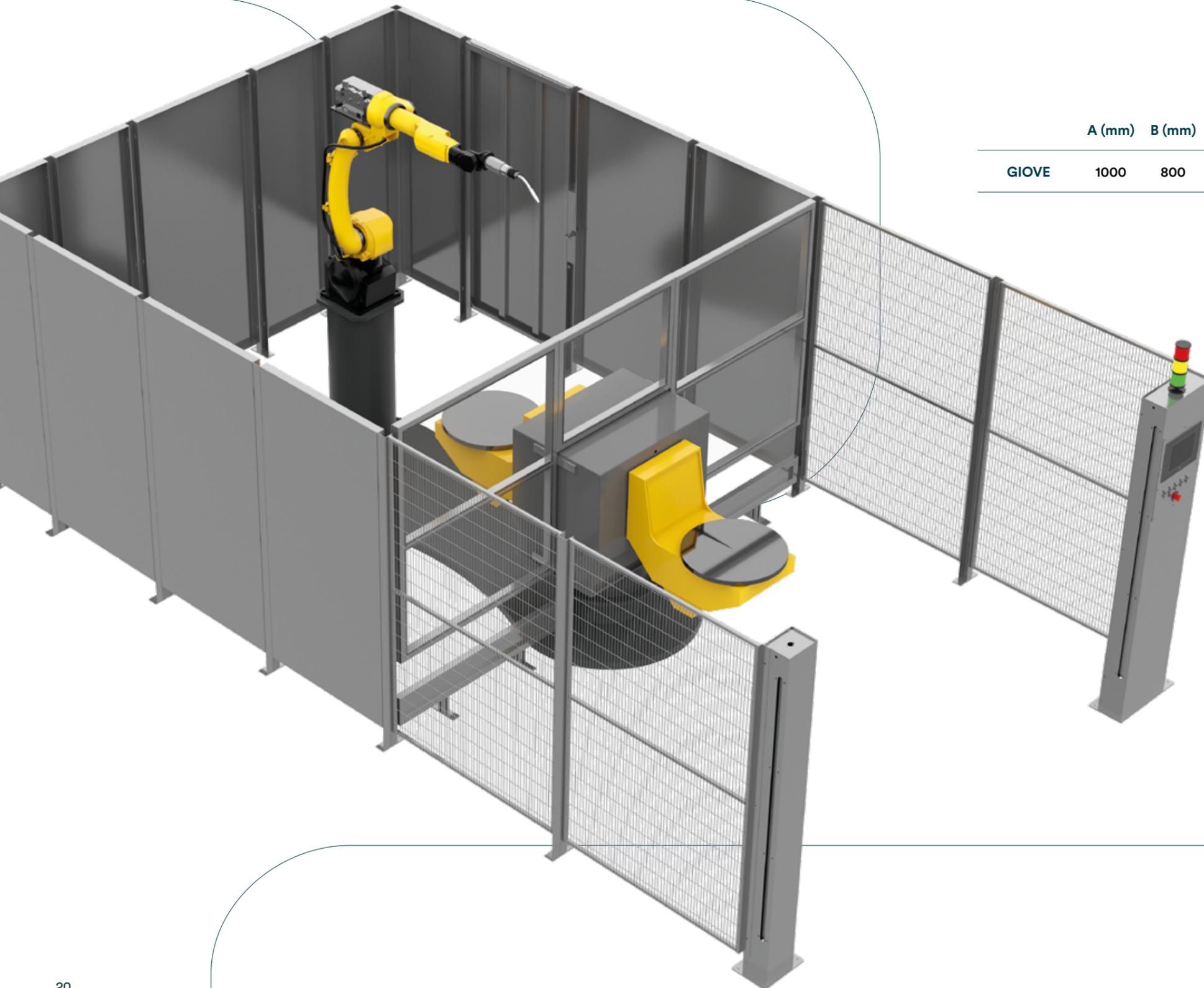


GIOVE

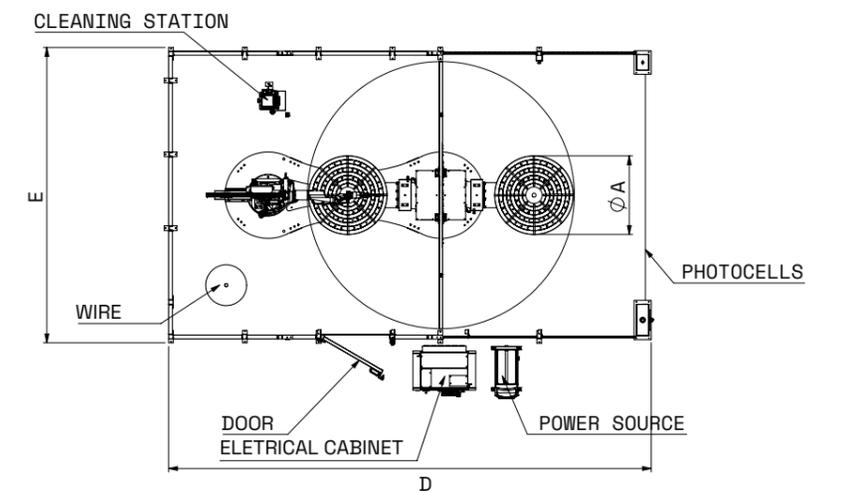
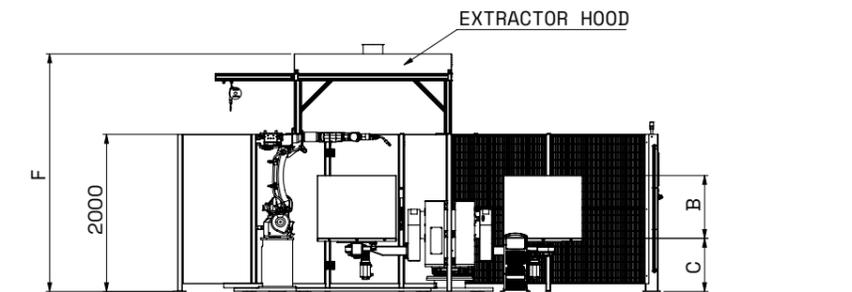
DOUBLE ROTARY ORBITAL TOOL
WITH STATION CHANGE-OVER ON VERTICAL AXIS

TECNOROBOT

TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
GIOVE	1000	800	700	6200	4000	3400	—	500	AM 100 iD/ 10L

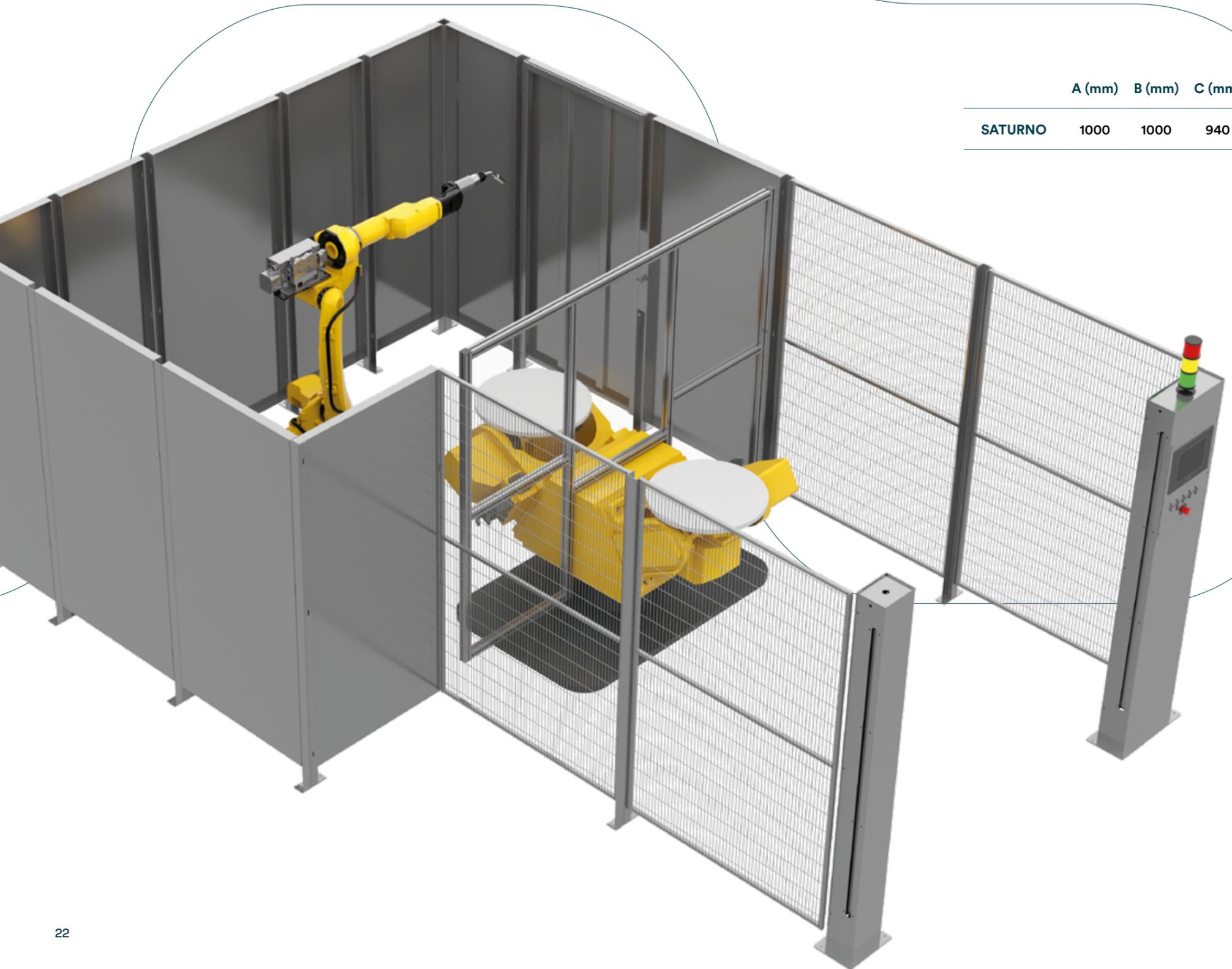


SATURNO

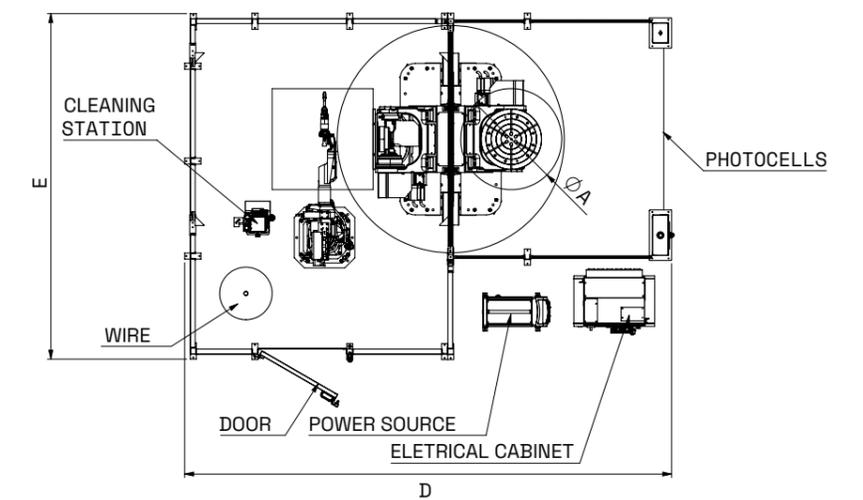
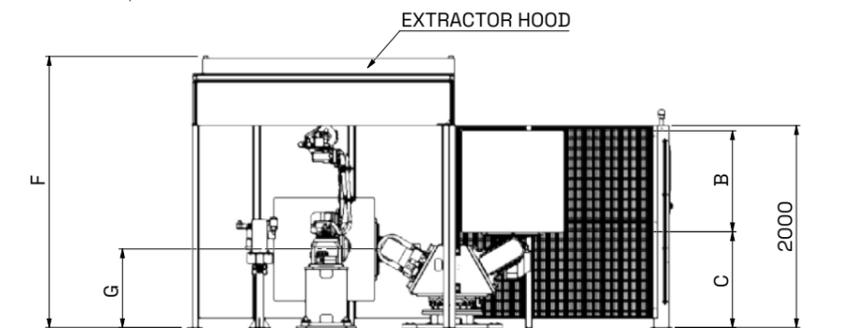
DOUBLE ROTARY ORBITAL TOOL
WITH STATION CHANGE-OVER ON VERTICAL AXIS

TECNOROBOT

TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
SATURNO	1000	1000	940	5000	3400	2800	770	500	AM 100 iD/ 10L

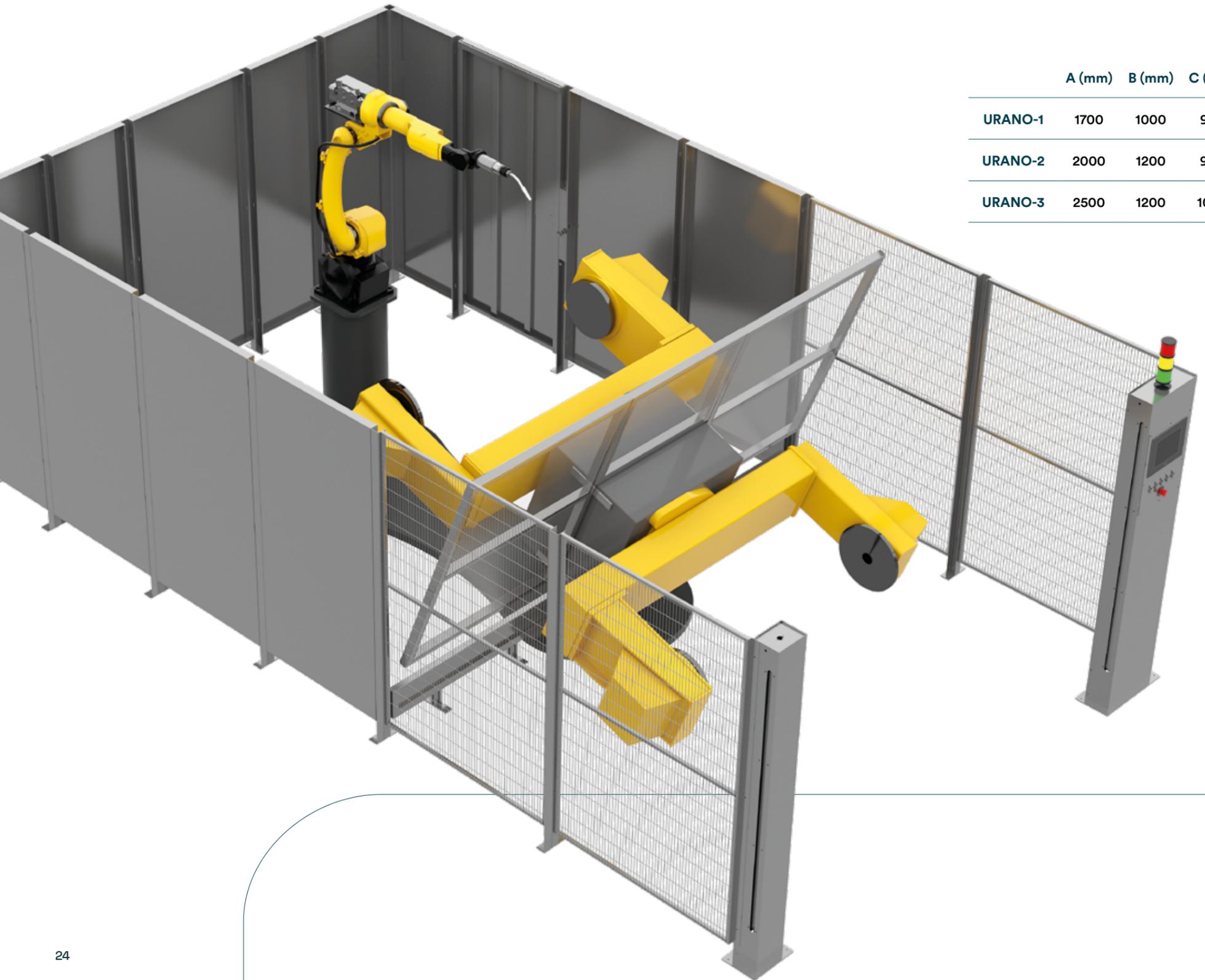


URANO

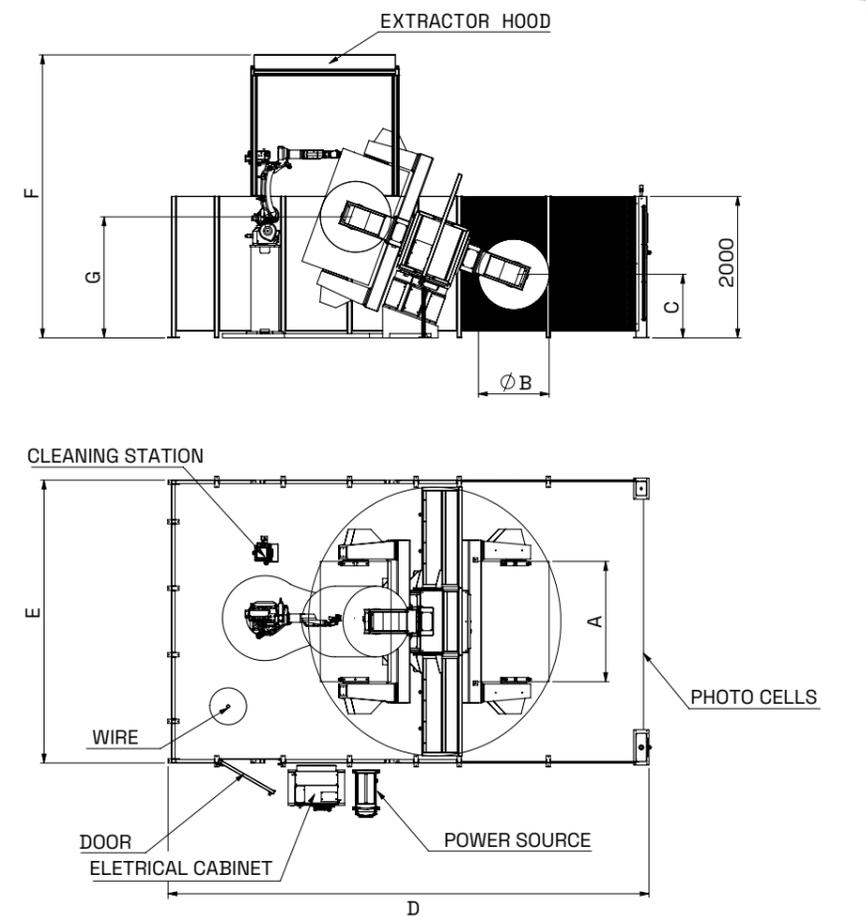
DOUBLE TILTING ROTARY LATHE
WITH STATION CHANGE-OVER ON VERTICAL AXIS

TECNOROBOT

TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
URANO-1	1700	1000	900	6900	4100	4000	1700	500	AM 100 iD/ 10L
URANO-2	2000	1200	900	7200	4800	4200	1750	500	AM 100 iD/ 8L
URANO-3	2500	1200	1000	8000	5000	4600	1900	750	AM 100 iD/ 8L

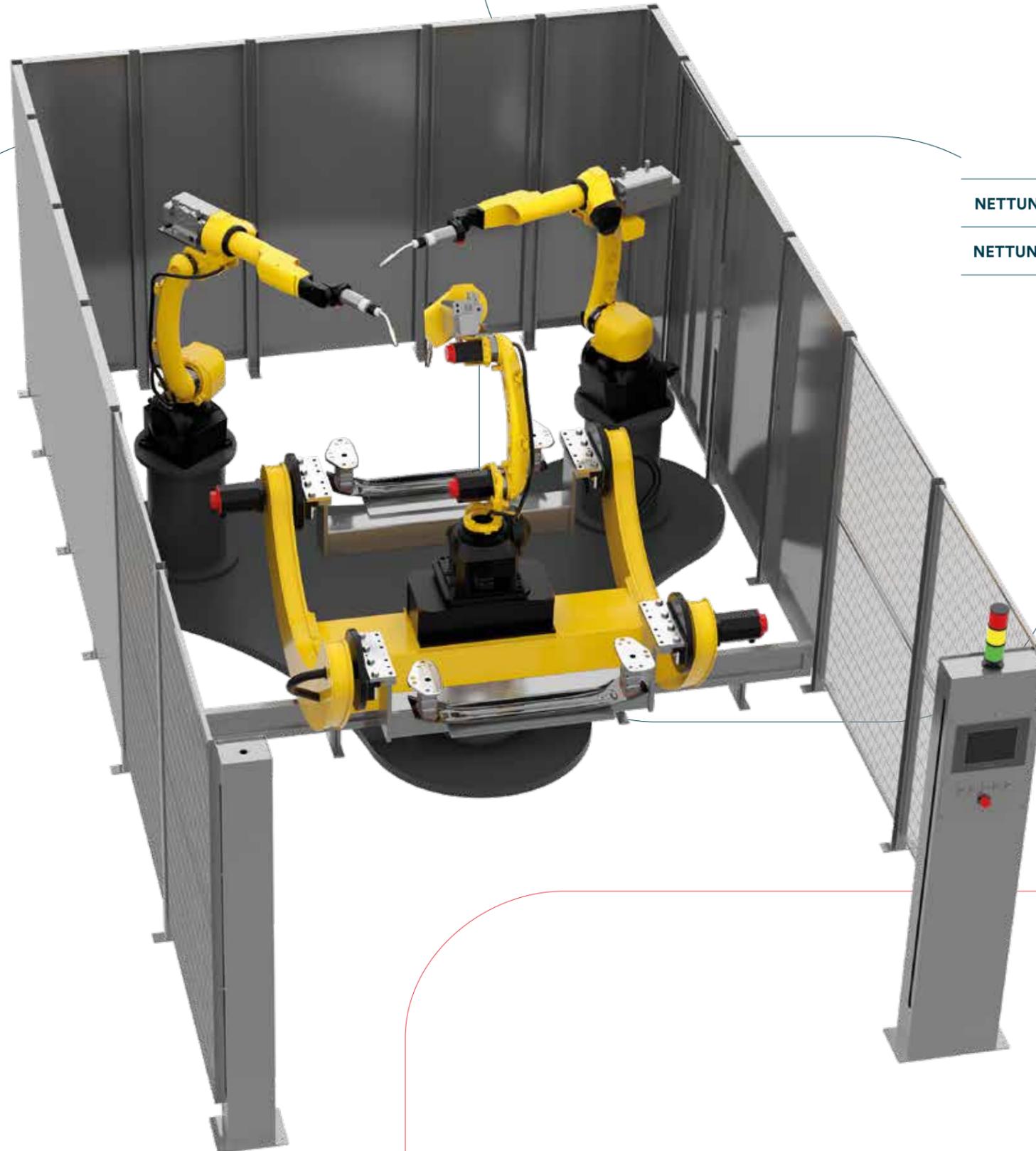


NETTUNO

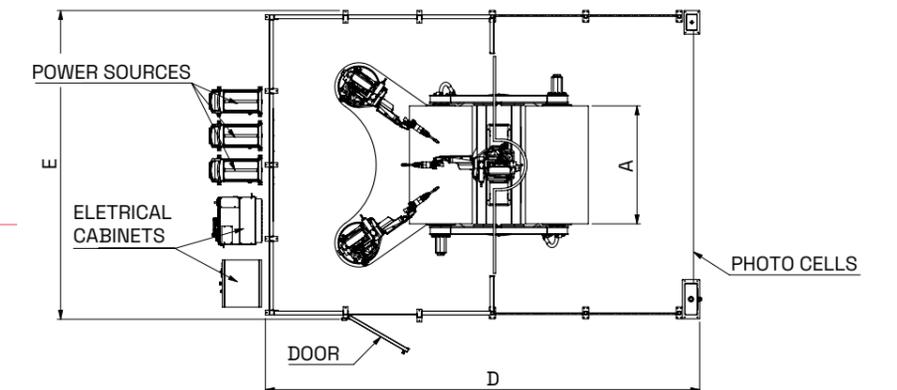
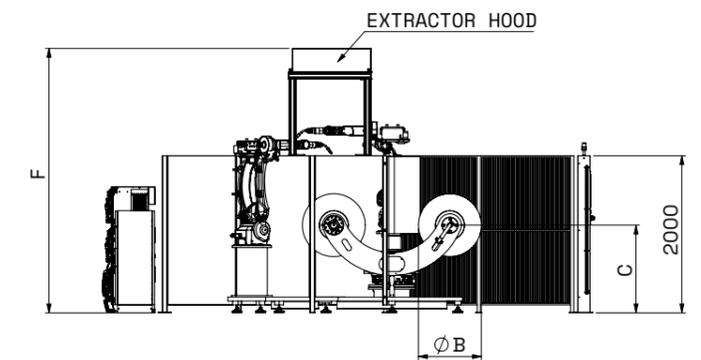
DOUBLE LATHE
WITH STATION CHANGE-OVER ON VERTICAL AXIS - 3 ROBOT

TECNOROBOT

TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
NETTUNO-1	1500	800	1115	5500	4000	4000	—	250	AM100 iD
NETTUNO-2	2000	1000	1115	6000	4500	4000	—	250	AM100 iD

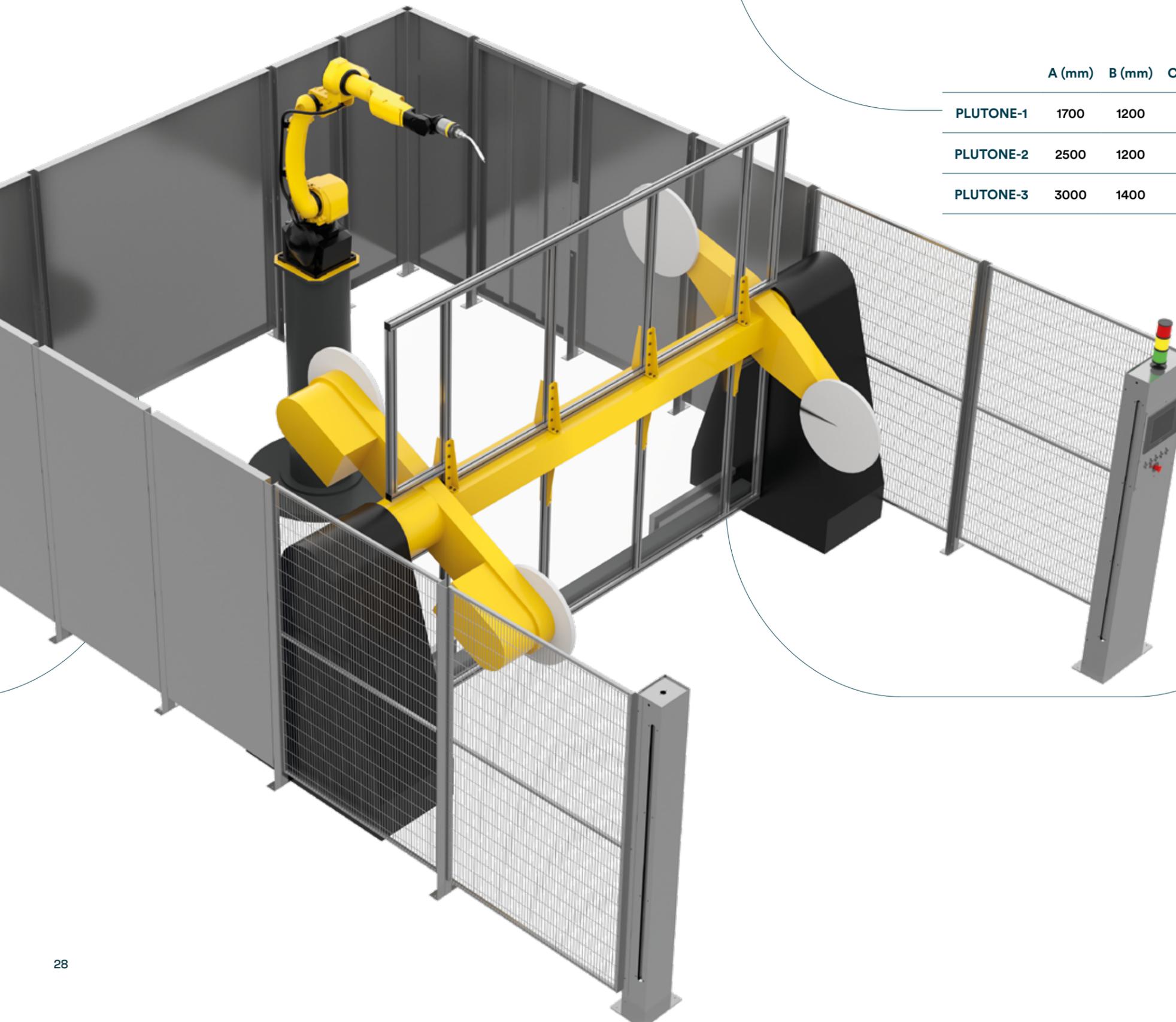


PLUTONE

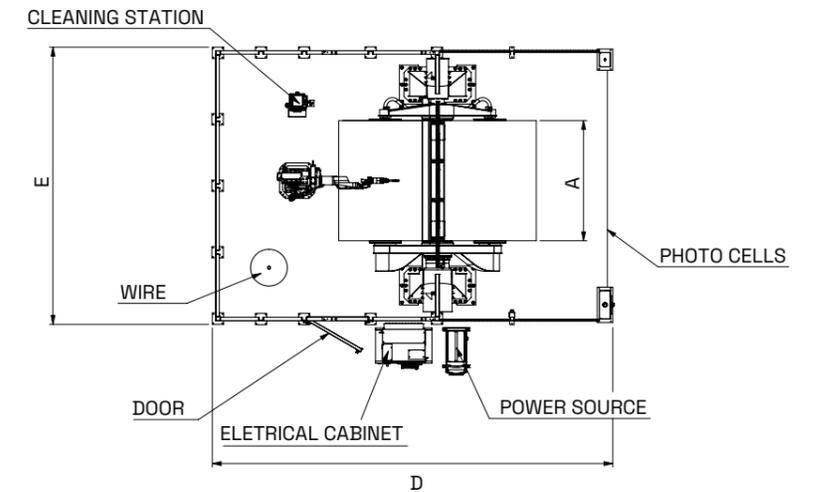
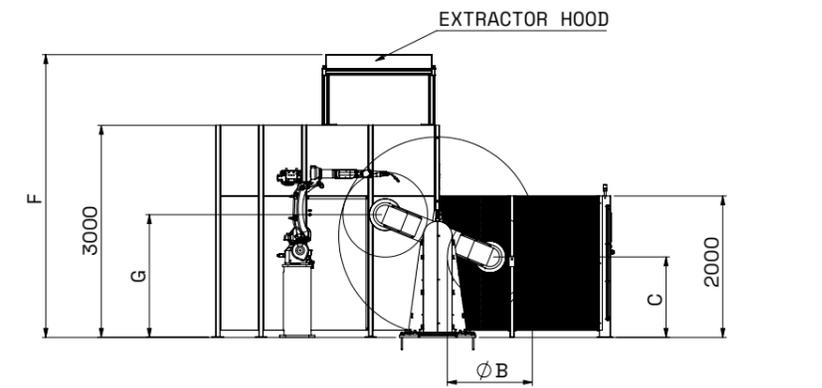
DOUBLE LATHE
WITH STATION CHANGE-OVER ON HORIZONTAL AXIS

TECNOROBOT

TR READY



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Load capacity W (kg)	ROBOT
PLUTONE-1	1700	1200	1170	5800	4000	4000	1750	500	AM 100 iD/ 10L
PLUTONE-2	2500	1200	1170	5800	4800	4000	1750	500	AM 100 iD/ 8L
PLUTONE-3	3000	1400	1270	6000	5300	4000	1850	1000	AM 100 iD/ 8L





TECNOROBOT S.r.l.
Via del Lavoro 11/13
20884 Sulbiate (MB) – Italy
P.IVA 03146010131
codice SDI: JYPD5IG

+39 039 9515022
commerciale@tecnorobot.com



**your
rob**solution.



your
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