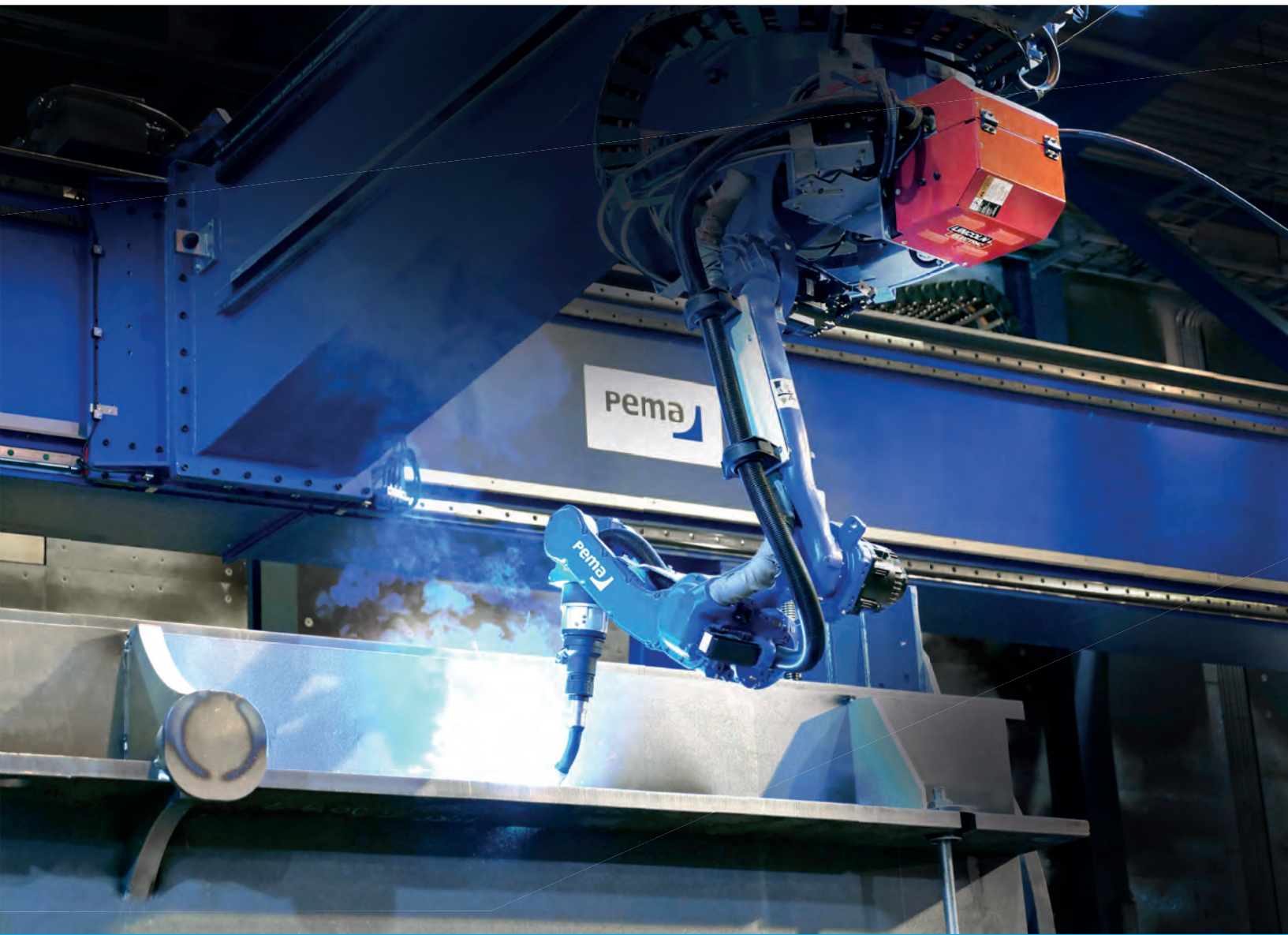


PEMA ROBOTIC WELDING

SOLUTIONS FOR HEAVY WELDING AUTOMATION



**FOR ONE-OFF AND
SERIAL PRODUCTION**

**USER-FRIENDLY
SOFTWARES**

**TURNKEY
SOLUTIONS**



PEMA ROBOTIC WELDING

SOLUTIONS FOR HEAVY WELDING AUTOMATION

The modular PEMA product range allows to build the production system of numerous components with a large variety of robot tracks and material handling positioners and welding process combinations. Pemamek's experience of robot programming tools and optimizing production flow combined with your knowledge brings out the best solutions and practices to boost your productivity.

**THIS IS
ROBOTIC
WELDING
AUTOMATION.**

1

OPERATOR

Complete process from assembly to welding can be managed by one operator.

100%

TURNKEY SOLUTION

From concept to production.

200h → 24h

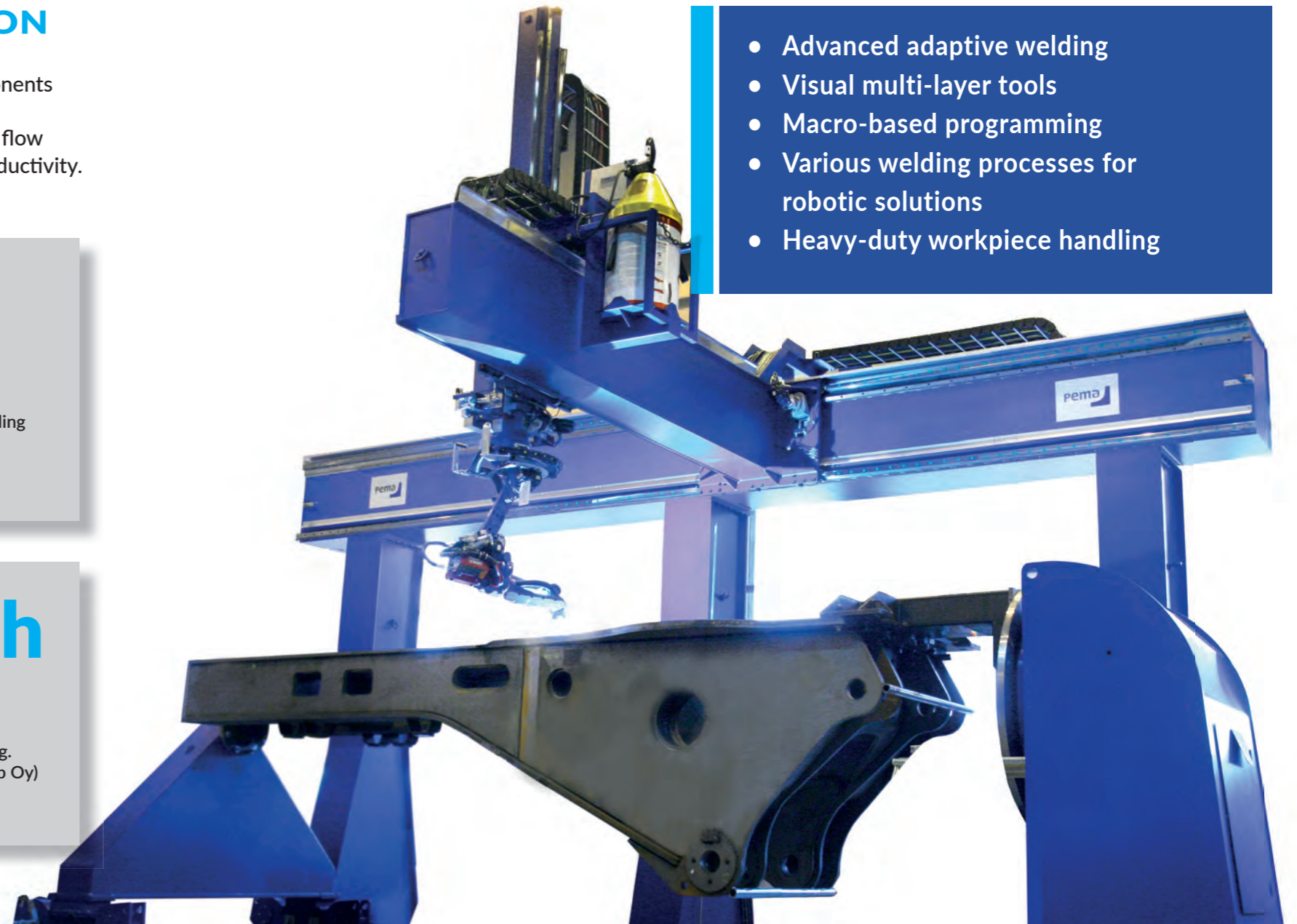
TIME SAVINGS

From manual welding to robotic welding.
(Heavy material handlers, Mantsinen Group Oy)

**INNOVATIVE SOLUTIONS,
GREATER PERFORMANCE.**

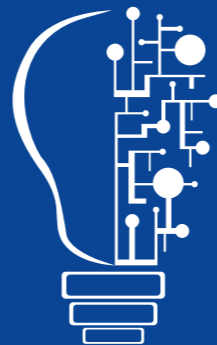
Pema
WELDING AUTOMATION

- Advanced adaptive welding
- Visual multi-layer tools
- Macro-based programming
- Various welding processes for robotic solutions
- Heavy-duty workpiece handling



5 STEPS TO SUCCESSFUL AUTOMATION WITH ROBOTS

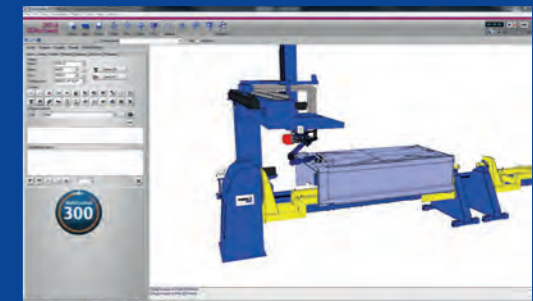
1. Thorough evaluation and predesign phase together with the supplier and the purchaser to have the right solution.
2. Possible design changes in the products as groove geometry and groove preparation method.
3. Welding process evaluation and modification into robotic welding.
4. Tailored and thorough training for all the participants.
5. Good level of maintenance and follow up together with the supplier.



USER-FRIENDLY OPERATION WITH PEMA WELDCONTROL

Create, copy, mirror and duplicate and move robot paths as you wish.

- Software environment for easy "on the fly" -programming
- Automatic calculation of robot external axes
- Welding experience turned into practice in robotic welding
- Fast and visual method to control robots
- Creating and using macros and parameter libraries



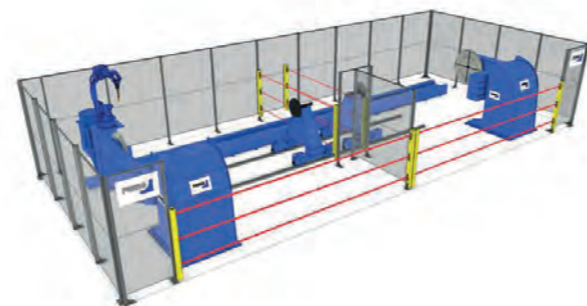
COMPACT



PEMA solution:
X: -
Y: 9000 mm (30 ft)
Z: -
Two Cells with 2t + 2t positioners
Max. work piece diameter in rotation: 2500 mm (8 ft)

HEAVY WELDING WITH COMPACT ROBOT CELL

- Cost-Effective
- Max. workpiece weight 4t
- ONE-OFF production with PEMA WeldControl 300 OFFLINE



PEMA solution:
X: 3600mm (12ft)
Y: 3640mm (12ft)
Z: 2000mm (7ft)
One cell with 5t 3-axis positioner
Max. work piece diameter in rotation: 3400mm (11ft)



PRODUCTIVE

MAXIMUM PERFORMANCE WITH PEMA GANTRY SOLUTIONS

- Modular long reach gantry movements enables fast programming with mirror/copy tools
- Max. work piece weight 5t
- PEMA WeldControl 300 OFFLINE / SCAN for thick materials and bevelled grooves



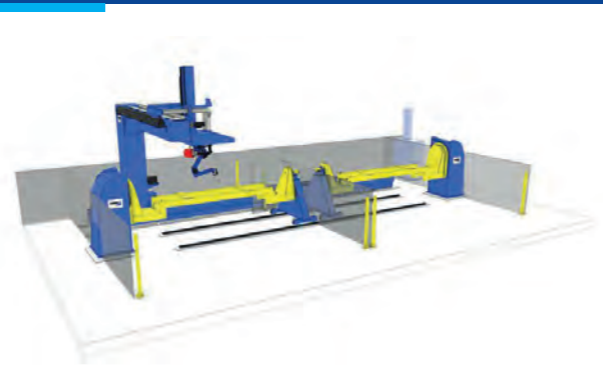


Manual welding:36h
 > Robotic welding:6h
 PEMA solution:
 Two C&B-type gantries
 X: 1500mm (5ft)
 Y: 1800mm (6ft)
 Z: 3000mm (10ft)
 One cells with 50t positioner
 Max. work piece diameter in rotation: 6500mm (21ft)

Manual welding:26h
 > Robotic welding:8h
 PEMA solution:
 X: 23000mm (75ft)
 Y: 4000mm (13ft)
 Z: 2500mm (8ft)
 Two Cells with 10t + 10t positioners
 Max. work piece diameter in rotation: 3000mm (10ft)

FLEXIBILITY THROUGH MULTIPLE CELLS IN ONE SOLUTION

- Multi-Cell solution enable unmanned production
- Modular workpiece handling and gantry systems
- PEMA WeldControl 300 OFFLINE



50 YEARS OF EXPERIENCE IN HEAVY WORKPIECE HANDLING

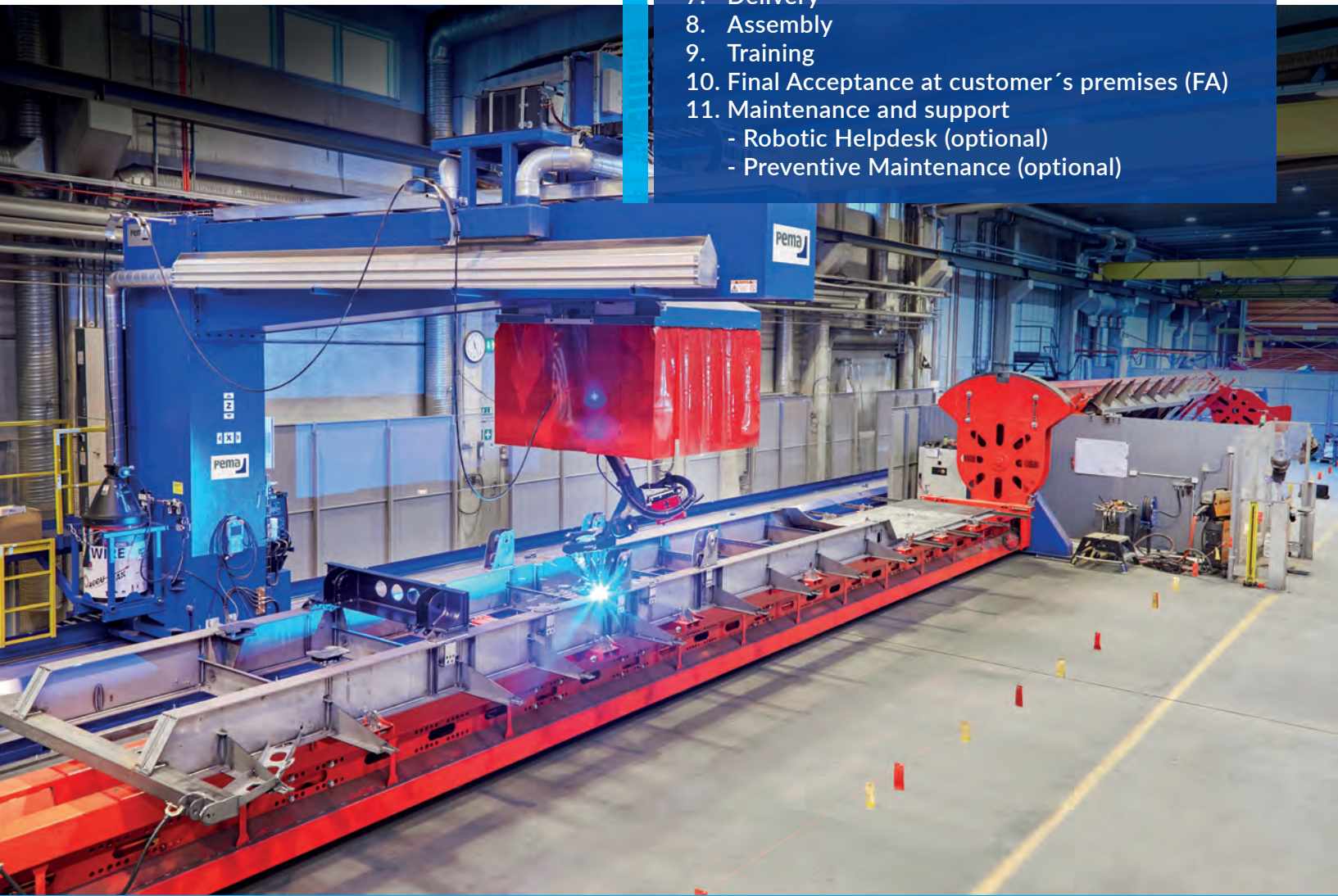
- Heavy-duty workpiece handling - up to 100 t
- PEMA WeldControl 300 OFFLINE / SCAN / CREATE
- Increase output with multi-robot solution



Stand out from competitors with

PEMA TURNKEY SOLUTIONS

1. Welding process evaluation
2. Product weldability/reachability simulation/evaluation
3. Solution design and manufacturing
4. Welding process testing at PEMA Process Center (optional)
5. Product programming with PEMA WeldControl tools (optional)
6. Factory Acceptance Testing (FAT)
7. Delivery
8. Assembly
9. Training
10. Final Acceptance at customer's premises (FA)
11. Maintenance and support
 - Robotic Helpdesk (optional)
 - Preventive Maintenance (optional)



YOUR INDUSTRY, PEMA'S SOLUTION.

GENERAL FABRICATION

SHIPBUILDING

OFFSHORE AND PROCESS
EQUIPMENT

WIND ENERGY

HEAVY EQUIPMENT

POWER GENERATION

Pema
WELDING AUTOMATION

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