

# ADAPTIVE PROCESSES | AUTOMATED POLISHING

## ROBOTIC CELL FOR BLADE & TURBINE FINISHING

### 100% AUTOMATIC SOLUTION FOR QUALITY CONTROL



TPSH has developed an innovative automated adaptive process technology for the finishing of parts.

Our robotic polishing and grinding cell combines a 2D/3D measuring system with automatically parameterised trajectories in PHL-AA (Adaptive Automatic Offline Programming). The objective is to provide a better productivity and ensure traceability by generating a control and conformity report in automatic of the state of a part after polishing / deburring.

This TPSH robotic polishing/deburring technology for aeronautical blades and turbines is a turnkey system that significantly improves product quality and reduces exported non-quality.



### INTEGRATE AUTOMATIC POLISHING INTO YOUR PRODUCTION PROCESS:

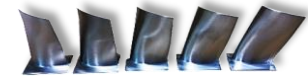
- ☑ **Control:** Automatic generation of a control report and Class F and F+ conformity
- ☑ **Safety:** ATEX environment
- ☑ **Measurement:** Automatic quantification of the data assigned to the process in order to bring the part as close as possible to the theoretical one
- ☑ **Robotic:** Automatic creation of a series of adaptive trajectories for each part

### BRING THE POWER OF TPSH TECHNOLOGY TO PERFECT ROBOTIC POLISHING:

- ☑ Complete and automatic polishing/deburring of the parts:
  - **Blades:** BA/BF, vein, Extrados/intrados, vein rays, policeman's hats, etc...
  - **Turbine:** BA/BF, vein, Extrados/intrados, vein radii, flange, flange holes, etc...
- ☑ Increasing the production rate and monitoring the quality of each parts
- ☑ Decrease in polishing scraps

### ENSURE YOUR QUALITY INDICATORS WITH OUR 100% AUTONOMOUS CELLS:

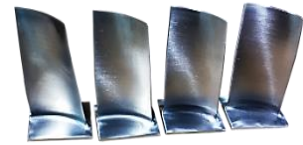
- ☑ System compatible with all types of blade models
- ☑ Traceability of conformity reports
- ☑ Adaptation of the trajectories according to the shape defects of the parts
- ☑ Cycle supervision HMIs for statistical analysis and tracking
- ☑ Incl. particle suction system



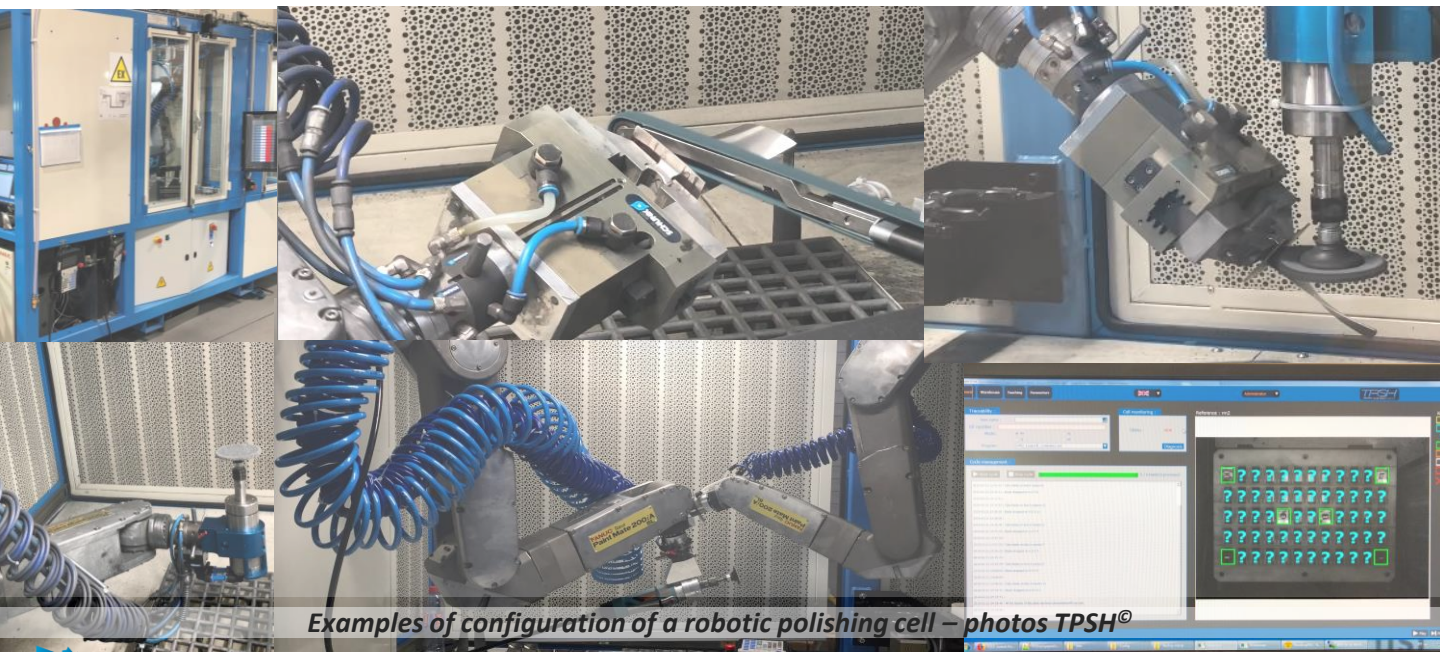
*Examples of polished intrados blades*

**SOME FIGURES:**

- OEE > 95%
- 6min/full blade
- Autonomy 7.5 hours or 50 blades



*Examples of polished extrados blades*



*Examples of configuration of a robotic polishing cell – photos TPSH®*