

# FAIRS & EXHIBITIONS

# TEM News

ATL Anlagentechnik Luhden GmbH - Machines for Thermal Deburring

## Review of the EMO Hannover 2011

At the very end of 2011, ATL took stock of the exhibition: The first attendance at the EMO Hannover, leading international trade fair for the machine tool industry, was consistently positive. „It was a successful start for us. Nobody expected such a high level of response“, says Jörn Struckmann, CEO of ATL Anlagentechnik Luhden GmbH and adds: “We established interesting contacts and were able to demonstrate the visitors the high potential of thermal deburring. One thing is certain for the company from Luhden in Lower Saxony: This was definitely not the last attendance at the EMO.

Those who weren't able to come to the booth are welcome to visit the company and convince themselves of the thermal deburring method.

According to prior agreement, it is also possible to send sample parts to ATL for carrying out deburring trials. Enquiries can be made by Mr. Nungesser at +49 5722 99219-23.



## Fairs & Exhibitions in the Year 2012

In 2012, ATL Anlagentechnik Luhden GmbH will attend at international exhibitions. All exhibitions and dates are also available in the internet: [www.atl-luhden.de/en/contact/exhibitions](http://www.atl-luhden.de/en/contact/exhibitions).

	26. - 30. March, Paris (FR)
	16. - 20. April, Birmingham (GB)
	12. - 16. June, Beijing (CN)
	18. - 22. September, Stuttgart (DE)
	23. - 26. October, Stockholm (SE)

### Preview of Issue 02/12

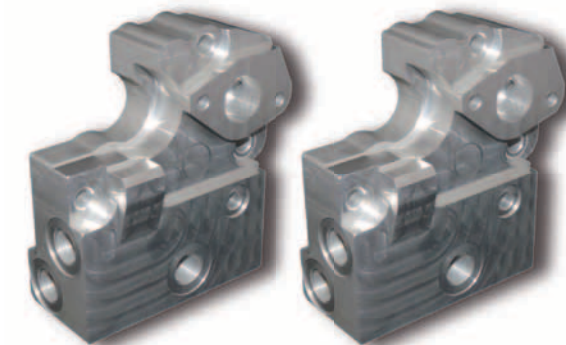
- Biggest Long Chamber Machine Delivered
- Process Optimization due to *iTEM400*
- *iTEM400* for German Precision Manufacturer
- New Plant at Company Site in Luhden
- *iTEMPlastics* - Thermal Deburring of Plastics



## In Comparison: TEM versus HPWJ Deburring

TEM deburring often competes with other deburring methods. The following example shows that there are workpieces which can be clearly assigned to thermal deburring.

With the help of a workpiece from the field of truck engine technology, the comparison of the thermal deburring method and high-pressure water jet deburring is shown below.



Thermal Deburring and High-Pressure Water Jet Deburring in a Direct Comparison		
	Thermal Deburring	High-Pressure Water Jet Deburring
Machine	<i>iTEM250 SC</i>	machine with 750 bar
Investment	starting at 250,000 €	starting at 300,000 €
Connection	<ul style="list-style-type: none"> <li>• electricity</li> <li>• methane (CH<sub>4</sub>) or natural gas</li> <li>• oxygen</li> </ul>	<ul style="list-style-type: none"> <li>• electricity</li> <li>• water</li> </ul>
Cycle Time	8 workpieces in 90 seconds	2.5 minutes/workpiece
Capacity (piece/h)	320 pieces	24 pieces
Energy Costs	<ul style="list-style-type: none"> <li>• electricity → 6 kW/h</li> <li>• methane → 0.0043 Nm<sup>3</sup>/piece</li> <li>• oxygen → 0.0086 Nm<sup>3</sup>/piece</li> <li>• total energy costs → 0.02 €/piece</li> </ul>	<ul style="list-style-type: none"> <li>• electricity ~ 80 - 200 kW/h (140 kW/h elected)</li> <li>• total energy costs ~ 0.55 €/piece</li> </ul>
Advantages	<ul style="list-style-type: none"> <li>+ unmatched cleanliness, as all chips and burrs are oxidised</li> <li>+ reliable removal of burrs, adherent particles, and deposit</li> <li>+ low expenditure of time</li> <li>+ low energy costs</li> <li>+ several workpieces at once</li> <li>+ non-selective process, as everything is covered with gas</li> </ul>	<ul style="list-style-type: none"> <li>+ chip removal, deburring and cleaning in one cycle</li> <li>+ no thermal load</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>- additional purification is necessary in normal cases</li> <li>- slight heat input on the workpiece surface (aluminium approx. 90 °C, steel approx. 150 °C)</li> </ul>	<ul style="list-style-type: none"> <li>- high energy costs</li> <li>- complicated quality control</li> <li>- maintenance-intensive (nozzles, pumps)</li> <li>- selective process, every deburring area has to be approached separately</li> </ul>

# PROJECTS & REFERENCES

## Backlog Demand: Chinese Industry Requires Efficient Deburring Method

### TEM Deburring for Hydraulic Components

The thermal deburring is on the advance worldwide. Among other things, ATL was able to place, or rather already successfully realize projects in Asia lately. One of them was an *iTEM400* for Jiangsu Guorui Hydraulic Machinery Co., Ltd. The Chinese manufacturer of carbon steel hydraulic components primarily produces parts for industrial and construction machinery and agriculture.



[www.chinaguorui.com](http://www.chinaguorui.com)



### TEM Machine Completes DMG Production Line

Another project in Asia has been realized in cooperation with DMG (Deckel Maho Gildemeister). In this project, ATL Anlagentechnik Luhden acts as a subcontractor and completes the new production line of the Gildemeister AG for its Chinese customer Shandong Changlin Machinery Group Co., Ltd. with an *iTEM400/600*.

One key benefit of an *iTEM400* is its variability. It allows the operation of different sized deburring chambers with different maximum gas filling pressures. This is a unique advantage which currently does not exist to the same extent.

The machine from ATL Anlagentechnik Luhden's standard range is equipped with 5 stations and a deburring chamber of the size Ø 400 x 300 mm. The maximum gas filling pressure of this machine is 12 bar, the average cycle time in single shot operation is approximately 45 seconds. Workpieces with a maximum size of Ø 395 x 280 mm can be deburred within this short time.



Shandong Changlin is a manufacturer of construction and agricultural machines, and diesel engines. For such a product range, the thermal deburring machine from ATL is very versatile. The deburring chamber with a size of Ø 400 x 600 mm allows thermal deburring of large workpieces up to a maximum size of Ø 395 x 580 mm. The *iTEM400/600* has 2 stations (closing plates) and can build up a maximum gas filling pressure of 16 bar.



[www.changlingroup.com](http://www.changlingroup.com)



## Deburring & Purification for the Hydraulic Industry

The thermal deburring has a long tradition at nearly all manufacturers of the hydraulic industry. They already implement the TEM process to remove loose and solid burrs after CNC-machining.



### Example: Hydraulic Valve Housing

1. Pre-deburring, optical control, removal of large chips
2. Prewashing, removal of cooling lubricant residuals and oiling
3. **Thermal deburring**
  - a. First shot → deburring shot
  - b. Second shot → oxide reduction and removal of oxide pearls
4. Removal of the oxide layer by means of an ultrasonic cleaning unit and pH neutral medium
5. Honing
6. Purification before final assembly