AGTOS® Report

Current Reports on Surface Technology
June 2011 Issue

Successful Foundry Concept at ATIK METAL

The new ATIK METAL foundry building and its proprietors, Mehmet and Murat Atik

The Atik family has been operating a medium-sized foundry named AK DÖKÜM in Izmir, Turkey, since 1954. In 2008, the decision was made to start over at a new location in Aliaga, approximately 60 km north of Izmir. Since then, a new structure has been built on approx. 40,000 m² of paved area on an 80,000 m² lot. Great care was taken in adhering to the latest environmental regulations when outfitting the new facility.

Exit ramp of the blasting machine with jet-cleaned castings

Well-known clients, mainly from Western Europe, appreciate the innovative approach to state-of-the-art casting and finishing technology.

Modern Blasting Technology

Work pieces are automatically removed from the molds while still hot and transported to the ***AGTOS***-supplied cooling zone by a monorail system. There they are cooled down to < 80 °C. An automatic feeding device then transports the hangers with the work pieces to the first blasting position in the ***AGTOS*** continuous rail overhead shot blasting machine, which is configured as a dual chamber blasting system.

This has several advantages: For one, two full hangers can be blasted in parallel,

Castings with sand adhesions before the blasting process

EDITORIAL

Concepts are in! What is the best way to integrate blasting technology into my process? Which pretreatment and finishing systems should I use? How do I achieve the flexibility I need? These are questions increasingly asked by our customers. Find helpful suggestions for your blasting tasks in this issue of the „***AGTOS*** Report".

Additional information is available on our website at www.agtos.com

Your ***AGTOS*** Team

The cooling zone also functions as a buffer zone.

increasing the system's capacity. It also makes it possible to run two different blasting programs at the same time, allowing the simultaneous treatment of work pieces with differing geometries with different blasting programs.

Hardening Springs

Task:

Parabolic and coil springs sometimes have to be pretensioned, cleaned, descaled and hardened after thermal treatment.

Solution:

Two blasting machines – an ***AGTOS*** roller conveyor blast machine and an ***AGTOS*** puller feed blast machine – are used.

The former achieves the required pretension with a pressing force of 20 t and an upstroke of 200 mm. It can treat work pieces with a maximum length of 1,750 mm. As they pass through the machine, the surface of a pair of springs is hardened at the tightened end and at the edges. The transport is program controlled to run at a feeding rate of 3 – 10 m/minute. Sensors automatically advance to the next transport step at the transfer points of the roller conveyors.

*Pretensioned parabolic springs inside the **AGTOS** blasting machine.*

The second ***AGTOS*** system is used to harden coil springs. Processing lengths can vary from 150 to 1000 mm. The blasting task: abrasive blasting and shot peening to a hardening value of 40 Almen. Work pieces are transported using 2 parallel conveyor shafts and a lifting bar.

***AGTOS** Diabolo Pipe Blast Machine for cleaning pipes with a diameter of 60 to 160 mm.*

Blasting Pipes

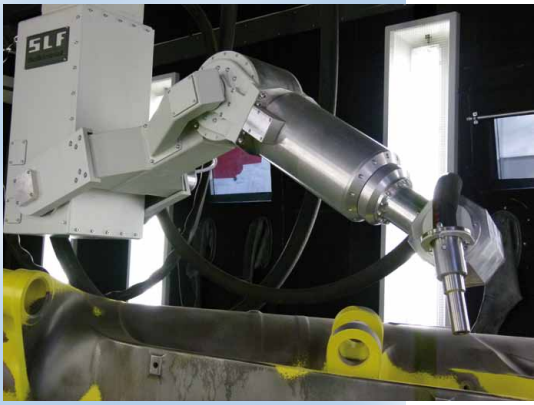
Task:

To clean pipes with a diameter of 60 to 160 mm

Solution:

Diabolo rollers move the pipes forward into the blast machine and cause them to rotate. Before they reach the intake gate to the blasting chamber, a signal threshold sends an impulse every time a pipe passes by, causing abrasive to be fed to the high performance turbines that are already running. This reduces wear inside the machines to a minimum. The pipes are cleaned evenly from the outside.

Blasting and Enameling



ReCo-Blaster sandblasting robot

If you are planning to acquire a compressed-air blast machine or an enameling line, our associate company, SLF in Greven, will no doubt be able to offer you an economical, practical solution.

SLF specializes in:

- Sandblasters
- ReCo-Blaster sandblasting robots **NEW**
- Airblast machines
- Enameling and drying booths
- Telescope booths
- Open-space paint spraying systems
- Materials-handling technology

You can find SLF at www.slf.eu.

Automatic indexing table unit with direct suction system

New Combination for Cutting, Drilling and Blasting – Peddinghaus/*AGTOS* Cooperation

More and more metal-working customers prefer complete solutions. The newly formed cooperation between Peddinghaus and ***AGTOS*** takes this into account.
Peddinghaus, a manufacturer of cutting/drilling machines, and ***AGTOS*** as the provider of blasting machines are working together and leveraging their strengths to provide complete solutions for metal processing. Peddinghaus is a company with long tradition that has been supplying the global steel processing industry for over 100 years. At its 7 locations in 5 countries, Peddinghaus is always working on systems that meet its customers' wishes as well as the requirements of the market. All equipment is characterized by its performance, speed and durability and by precision under the toughest conditions. The wide range of Peddinghaus products includes plate processing centers, angle steel machines, coping machines and drilling systems that can be combined with Portal band saws.

Foreground: the Peddinghaus line of cutting/drilling machines; background: ***AGTOS*** *roller conveyor blast machine for the treatment of profiles*

Cleaning Gearwheels and Shafts

Task:

Gearwheels and shafts are hardened before blasting. Wavy patterns, created on the surface during cooling in the oil bath, must be removed in the blasting process.

Solution:

An ***AGTOS*** continuous rail overhead shot blasting blast machine is used. The three-chamber system with loading chamber, blasting chamber and unloading chamber guarantees optimal sealing of the system. Turbines run continuously due to the high work piece throughput, however, the system only blasts when work pieces are in the blasting chamber. The gearwheels and shafts oscillate to the right and left in front of the turbines. This guarantees optimal blasting of the work pieces. Afterwards, the hangers move to the unloading lock, where they are blown down to remove dust and abrasive. A robot using a special device loads and unloads the hangers.

Work pieces on the special device in the blasting machine

Machine elements after blasting and before painting

Stripping Paint From Steel Structures

Task:

To roughen and clean trolley and luffing cranes (to 20 t) before powder coating to maximize paint adhesion

Solution:

The machine elements (high degree of exposure to sea water and sun) run through an ***AGTOS*** monorail blast machine at a speed of 0.2 to 1.5 m/min., reaching a purity level of B Sa 2.5. If necessary, the components can be finished manually after automatic airless blast cleaning in the integrated sandblasting and cleaning room. The system is controlled with a Simatic S 7 PLC that gives access to a wide variety of treatment processes. Heavily blasted areas are made of hard-wearing material. Rubber seals, strip brushes and labyrinths made of austenitic manganese steel are easy to remove and ensure a tight seal of the three cover vents.

***AGTOS** drum blast machine with feeder*

*Quick, clean and reliable: **AGTOS** wire mesh conveyor blast machine with blow-down station and soundproofing*

***AGTOS** construction blast machine for work pieces with complex geometries*

Cleaning Chain Links

Task:

To clean chain links (outer and inner plates of one-inch roller chains)

Solution:

Drum blast machines are often used to treat relatively small mass-produced components. The container with the work pieces is either placed into a feeder or emptied into it. The loading process can be very gentle, depending on how delicate the work pieces are. The ***AGTOS*** high performance turbines are controlled via PLC or manually. Before the blasting process begins, the equipment door closes and the drum pivots in front of the high performance turbine while also turning around its own axis. The drum is made of perforated manganese steel. The perforation size depends on the size of the work pieces and on the grain size and amount of draining abrasive. Cleverly designed devices promote the thorough mixing of parts. ***AGTOS*** recommends the use of two smaller drum blast machines working in tandem for facilities that operate continuously.

Treatment of Variable Sizes

Task:

To treat work pieces with different geometries quickly and reliably

Solution:

Highly versatile wire mesh conveyor blast machines are perfect for this application:

The work pieces to be blasted are placed onto a wire mesh conveyor that transports them through the loading chamber into the blasting chamber. There, high performance turbines blast abrasive at high speed onto the work pieces, which can be treated on all sides thanks to the specially designed wire mesh conveyor. They are then blown down to remove abrasive and dust. ***AGTOS*** wire mesh conveyor blast machines are designed to withstand the highest demands and – thanks to the high performance turbines – for very rapid and optimal blasting.

Another plus: An automatic abrasive metering device reduces wear by making sure blasting only occurs when work pieces are in the blasting area.

Descaling Subassemblies

Task:

To remove welding residue and scale from steel subassemblies

Solution:

The ***AGTOS*** RT-1500-1000 blast machine (flow height: 1,000 mm) is perfectly suited for the blasting of work pieces with complex geometries. The system only supplies abrasive to the running turbines after the work pieces cross the signal threshold located at the entrance to the loading chamber, thereby decreasing wear. The blasting chamber is made of wear-resistant manganese steel and offers optimal abrasion protection. In addition, the area blasted by the high performance turbines is covered with easy-to-exchange wearing plates.

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