INFO METALPOL

Castings – our passion

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IN THIS NUMBER:

Ladies and Gentlemen,

Marek PODGRODZKI
President of the Management Board

We have decided to publish this special METALPOL Info issue as an opportunity for all of us to recollect how many changes took place at METALPOL last year, how many projects facilitating our work, improving working conditions and safety and improving corporate image were implemented.

We get used to what is new and better fast and we forget about what it was like in the past, so I hope that this special issue will help us to remember what it was like before and what we have now and what new things we have managed to implement.

It is our ambition to make METALPOL one of the best and most modern foundries again, not only in Poland but also in the central and eastern part of Europe. Company development is the process of continuous improvement in all its areas of activity. To achieve that, you not only need to invest in new machines, implement new technologies and equipment that we have already, but first of all you need to improve the competences and awareness of all Company employees.

We did a lot in 2011, and we will do even more in 2012, and we hope that our investments will gather even more momentum in 2013.
Looking through this special issue, you will have a chance to see what we managed to accomplish in 2011 and familiarize yourselves with our plans for 2012.

I would like to thank cordially all those who put a lot of work, ideas and enthusiasm into our 2011 achievements, and especially I thank and congratulate all Maintenance staff on their good work.

Rehabilitation of the Company seat

Capital expenditure mean not only new machines and equipment, but also our corporate image. How our Customers perceive our Company is not less important than quality and timeliness of delivery of our products.
Therefore, we decided last year that one of the first projects conveying the corporate image to our Employees, Customers, Suppliers as well as Węgierska Górka residents and tourists would be rehabilitation of the Company seat, gate-house and grounds around the office building, including the handling yard.
The photos below illustrate changes on the premises. Comments seem redundant .....

Major Projects

Shot-blasting machine EURO-80

The projects implemented in the Company in 2011 place strong emphasis on fitting the Cleaning Department with additional machines and equipment that improve working conditions for operators there. It is our second shot-blasting machine (GOWG machine was the first one) which enables us to guarantee precise shot blasting of castings from our moulding lines.
The machine underwent thorough repair in respect of its mechanical and electric systems by our Maintenance operators. Loading, unloading and shot blasting processes are automated and machine operation consists only in control over its work, keeping the work station clean and tidy and filling in necessary quality documentation. The machine is fitted with the system of filter packs and auxiliary equipment guaranteeing that air purity standards are met.

The employees that contributed especially to the start up of the machine are:
Andrzej REJMAN, Paweł ZAZIĘBŁO, Władysław GĘBALA, Zenon GRZEGORZEK, Krzysztof SKRZYPEK, Władysław DREWNIAK, Stanisław POŁĄCARZ, Antoni TALIK, Zdzisław WOJCIUCH and other whom we wish to thank cordially.

Shakeout station for BMD line castings – shakeout chute

It is a very important end component of the BMD moulding line that we did not manage to complete when starting up the line in 2007, and we managed that only in 2011.

The station has improved working conditions considerably by reducing physical effort of the operators and enabled us to eliminate mechanical damage to the castings discharged from the BMD line. A comfortable operation platform between the chute and a shakeout grid was made as well as a belt conveyor collecting moulding sand that is recycled, a hydraulic wedge was installed to separate the feeders from the gating systems.
In addition, a hydraulic tipper was installed to enable the station to be used for separating the feeders in castings after they have cooled down in containers when the BMD line is off.

Ladles for spheroidisation in the DISA line

Manufacturer: ACETARC /UK/
Quantity – 4

Usable capacity of liquid cast iron – 2 tons
The cast iron spheroidisation process in the DISA line has been carried out in new ladles, called slender ladles, since June 2011.

They have replaced the old Kutner ladles used for many years. The principle of cast iron spheroidisation remains the same (with magnesium master alloy placed in the plate on the bottom of the ladle), but due to the ladle shape and specific dimensions (its height to diameter ratio) the application of such ladles results in a completely different course of the spheroidisation process. It is less turbulent, it generates less emissions and dustiness and it is safer for operators.

We purchased 4 ladles to ensure continuous and failure free operation. Furthermore, we managed together with the manufacturer to adapt the ladle design to enable ladle transport by a forklift truck if an overhead travelling crane is broken. The ladles are fitted with necessary safeguards against uncontrolled tilt and effective worm gears for turning when pouring cast iron into a pouring machine.

CNC processing centre HAAS

Number of tools – 20
Table dimensions – 500 mm x 400 mm x 400 mm
Spindle speed – 6000 r.p.m.
Manufacturer – HAAS /USA/

Casting tooling manufacturing is subject to special control and care at our Company. This is dictated by the fact that our strength in cooperation with our Customers is guarantee of fast and efficient start of production. To ensure this, we make majority of casting tooling in-house. This centre purchased in 2011 is another processing centre in the Production Preparation Department that enabled us to increase our capacity for making casting tools considerably.

Hydraulic wedges

We purchased two new stations made by Spanish INDEFUNSA for the separation of gating systems and feeders from castings in the second half of 2011. Each station is fitted with a hydraulic unit, hoses, wedge and a balancer compensating the wedge weight for an operator.

One of the machines is fitted with a 15T wedge, another one with a 24T wedge. The machines break off (split) the feeder or gating system from a casting by means of the hydraulic wedge using very high power. These machines enable us to eliminate partly circular cut-off machines that cause noise and dustiness from the operation of cutting off the feeders. The machines have been installed in the work stations: at the shakeout chute and at the station with the belt conveyor and tipper. We installed and commissioned them on our own. The implementation of these machines have improved working conditions in the Cleaning Department considerably, it has reduced physical effort of the operators, eliminated noise and enabled separation of the parts without rejects.

Feeder break off station

We put the machine designed for separating castings from gating systems and feeders to use in September 2011.

Castings manufactured in the BMD line are heavier and larger as far as their dimensions are concerned than castings from the DISA line. The main purpose for installing this station was to eliminate manual lifting of heavy castings and performing operations on the level of the floor. Castings together with gating systems and feeders are stacked in metal containers, and after cooling down they are transported to the stations and placed in the tipper.
From the tipper, castings are fed mechanically to a rubber belt conveyor. An

operator standing on an operation platform separates castings from feeders and gating systems by means of the hydraulic wedge or an angular grinder. Castings so prepared are transported by the conveyor to a container, and the operator throws gating systems and feeders into a separate container for process scrap metal. The machine has been fitted with a previously purchased tipper and hydraulic wedge accompanied by a hydraulic unit. Other components have been made in-house by us.

Before this station was installed, feeders used to be broken off manually by means of angular grinders and that required a high amount of work from the operator. This capital expenditure enabled us to improve considerably working conditions, work ergonomics at the station and productivity.

Other major projects implemented in 2011:

- new roof covering above the core shop
- making a fire detection and alarm system in the induction furnace area
- core storage and transport racks
- rehabilitation of all social rooms in the departments
- refurbishment/rehabilitation of workers' cloakrooms
- preparing a new cloakroom for women
- implementation of an employee information system (TV sets in the gatehouse and the office building)
- establishment of reference archives room and a backup server room in the office building
- the first phase of implementation of the state-of-the-art company integrated management IT system.

Jan Jurasz
Production & Technical Director

Capital expenditures planned in 2012

The most important capital project we shall focus on in 2012 will be further implementation of a state-of-the-art company integrated management IT system. We also plan next expenditures in production and technology areas.

The most important implementations planned for this year include:
- preparation of wire spheroidisation stations for the DISA and BMD lines equipped with the state-of-the-art technologies and equipment together with exhaust ventilation,
- optimisation of pouring into moulds in the DISA line by means of the latest generation laser system,
- implementation of the system of energy recovery from furnace cooling and its usage for heating the production space,
- installation of a 2.5 T furnace for the metallurgy of special cast iron grades made in the BMD line,
- start up of the fourth cooling store in the BMD line together with the replacement of the line control system.

In order to improve logistics throughout our Company, we plan to:
- repair the internal road between the scales and the canteen,
- create a finished and semi-finished product warehouse for W-4,
- install the second loading ramp in the Finished Product Warehouse,
- implement high rise storage racks and a high-lift truck in the Finished Product Warehouse.

For the cleaning and processing process, we plan capital expenditures including:
- pass-through cast cleaning machine for castings sensitive to mechanical damage,
- additional modern CNC machines for machining fittings for the mechanical department,
- gradual replacement of old machines with 21st century machines,
- implementation of a CNC machine for grinding castings that require a high-precision process.

We want to implement the following projects for the core making process:
- implementation of mixers and core coating stations,
- a core-drying stove for the BMD line,
- additional new machines for production of more complex and bigger cores for the core shop.

For the Quality Control process, we plan to purchase:
- a state-of-the-art spectrometer for the analysis of chemical composition,
- a microscope together with a PC and software used for metallographic analysis.

The most important investments related to corporate image improvement planned during this year include:
- a new website,
- professional company presentation on electronic media,
- a new modular exhibition stand as a company mark at industry trade fairs in Poland and throughout Europe.

We expect that we will manage to see through the projects planned that, we are sure, will improve METALPOL's competitive edge on the European market considerably.

Jarosław Jurasz
Commercial Director