

Columbia Steel Castings Co.



CENTURY OF GOOD LUCK

Columbia Steel Castings has used a diversified product offering and some good fortune for more than 100 years of success.

Not many large steel and iron alloy foundries are left in the United States. Columbia Steel Casting Co.'s vast, vertically integrated manufacturing facilities "tend to surprise first-time visitors," says Hobart Bird, owner and chairman of the board. He joined Columbia Steel after serving in World War II and since then has seen many quality U.S. foundries go belly up as his company continues to flourish.

Now that Columbia Steel is more than 100 years old, Bird reflects on his company's success. "It's a winning combination of market and product diversifica-

PROFILE

Columbia Steel Castings Co.

www.columbiasteel.com

Headquarters Portland, Ore.

Hobart Bird, chairman

"Everybody pulls together at Columbia Steel to make the best product, in the minimum time, in the most efficient way. In that regard, quality assurance is [company-wide]."

Columbia Steel Castings has had more than a century of success in the steel business.

tion, manufacturing finished products rather than commodities and, frankly, a bit of luck," Bird says. "There have been some fine foundries that have gone out of business, so we are fortunate to have customers who need our ability to solve their wear part problems."

Columbia Steel was founded in Portland, Ore., in 1901 and has been in its current location in north Portland since 1962. The company is one of the world's leading manufacturers of replacement "wear parts" made to withstand impact and abrasion at the point of contact. Large scale excavation, mining, ore processing, rock crushing, brick and cement plants and the recycling of metals and solid waste are some of the uses of wear parts manufactured at Columbia Steel.

The company proudly boasts all of its parts are American made. Columbia Steel has nearly half a million square feet under its roof, all in active use and manufacturing wear parts.

ENGINEERING EXPERTISE

Its in-house engineering department is where the manufacturing process begins. The engineering department, nearly a quarter mile from the main office, bustles with activity. Product engineers, in five product groups, do more than create drawings, they communicate with customers, sales people and dealers to solve specific end-user problems.

There is a fuzzy line between engineering and sales at Columbia Steel – even its district managers in the field are required to know some engineering and to work with product engineers in Portland to solve wear part problems for customers.

The engineers also work closely with dealers and customers to determine how to best design a wear part to meet the specific requirements of the customer's application. With a library of more than 40,000 part drawings, the engineers are adding to it daily.

Using CAD and computer-based solid modeling, engineers create drawings that will be used by Columbia's pattern shop to create a physical pattern of the part.

PATTERN SHOP

Few foundries still maintain their own pattern shop, let alone one of this size. "The advantage of an in-house pattern shop is the ability of engineers to work closely with pattern makers to produce a better end product," Bird says. It also shortens the manufacturing time because the pattern

shop can react quickly to the demands of the engineers and the foundry. More than 24,000 patterns are maintained and stored in on-site warehouses.

Most of the pattern makers were trained at Columbia Steel and have worked there for many years. Their years of experience show in their ability to hand-make detailed patterns within very small variances.

THE FOUNDRY

Four 20-ton overhead cranes move metal flasks, poured castings and ladles of molten metal up and down a 1,000-foot runway. Molders compact sand around patterns inside of metal flasks, utilizing semi-automatic equipment. Some of the equipment used includes three pairs of jolt squeeze pin lift molding machines, the largest of which handles 36-inch by 66-inch flasks. There are also three sand slingers that shoot sand into molds at a rate of one ton a minute. Two of the slingers suspend men on mechanical arms above flasks, compacting sand and producing the largest molds.

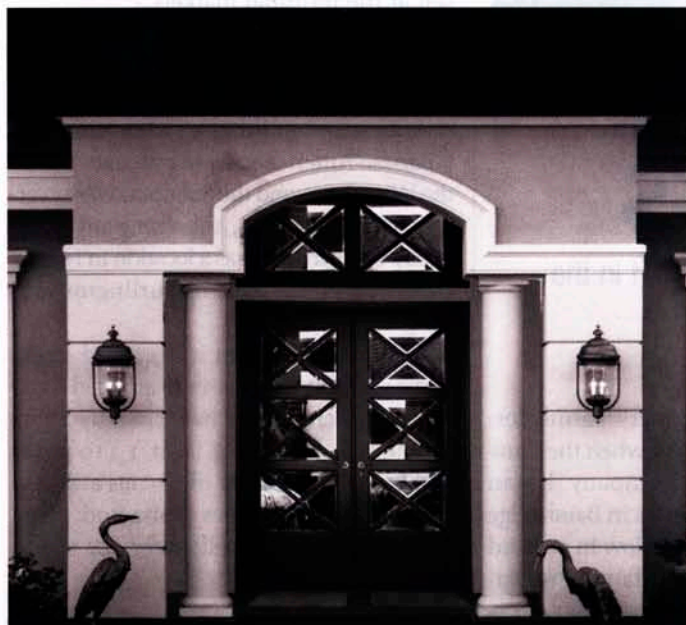
Columbia Steel pioneered the use of manufactured Olivine sand for molding in the United States.

The advantages of Olivine sand include that it is non-toxic, non-acidic, a good refractory and a good insulator of heat in comparison to other sands.

This sand is also better for the environment and safer for the workers than more commonly used silica sand.

QUALITY ASSURANCE

"Everybody pulls together at Columbia Steel to make the best product, in the minimum time, in the most efficient way. In that regard, quality assurance is not just our department, it's the whole company", Bird says. The company-wide dedication to produce the highest quality wear parts available is paramount not only to Columbia Steel's reputation, but to efficiently produce parts and deliver them to customers in a timely fashion. In its second year of implementation, lean methods have also increase the efficiency of the manufacturing processes plant-wide. **usb**



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