

Careful planning allows this Batavia, New York-based company to minimize lead times without carrying excess inventory. The company offers stocking programs for a variety of items, but tailors them to meet individual customer needs.

Industry Profile:

Brach Machine, Inc.

Meeting customer needs and getting it right

Brach Machine, Inc. was founded in 1985 by Bill and Nancy Brach to manufacture products for the die casting industry: specifically, shot-end tooling. The company is located in Batavia, New York, which was home to the one-time die casting giant, Doehler Jarvis.

Nancy contributed her expertise in business management and finance, while Bill drew upon his process engineering background. He had worked on improving the metal delivery systems for both hot and cold chamber machines at several custom die casting facilities. He found that even with the modern shot-end controls and monitoring systems that were emerging in the industry, machines without properly designed mechanical components did not have consistent metal delivery.

Brach Machine began working with die casters to reduce the variables related to shot-end tooling.

Getting It Right

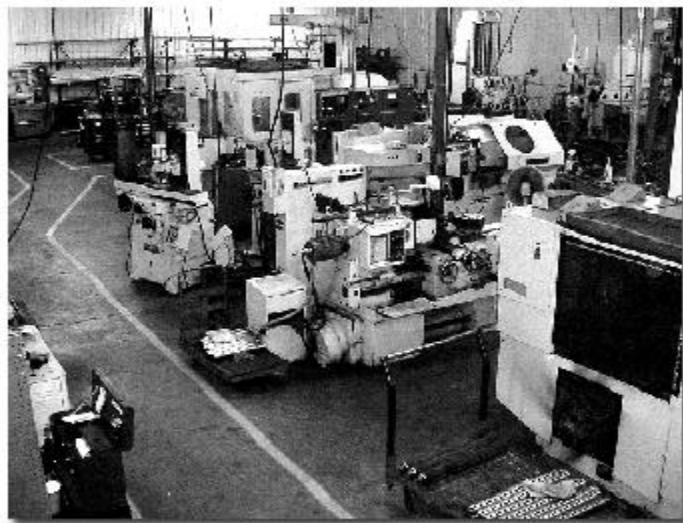
At Brach Machine, every customer is unique. There are no two die casters that approach the process in the same way. Although they may be running identi-

cal machines, metal delivery requirements can vary widely. "We have learned that to get it *right*, you can't just make hundreds of standard shot-end parts and expect everyone to use them," says Bill Brach. "We offer stock-

ing programs for a variety of items, but tailor them to meet the individual needs of our customers."

A key factor that separates Brach Machine from other shot-end suppliers is its firsthand experience with the die casting process. The entire staff has toured a custom die casting plant, and has seen both hot and cold chamber machines in operation. This gives everyone at Brach Machine a better understanding of how shot-end parts are used, and helps them to communicate more knowledgeably with customers.

Brach Machine operates a wide variety of CNC machine tools, and utilizes several engineering software packages to communicate with both customers and



Brach Machine shop interior.



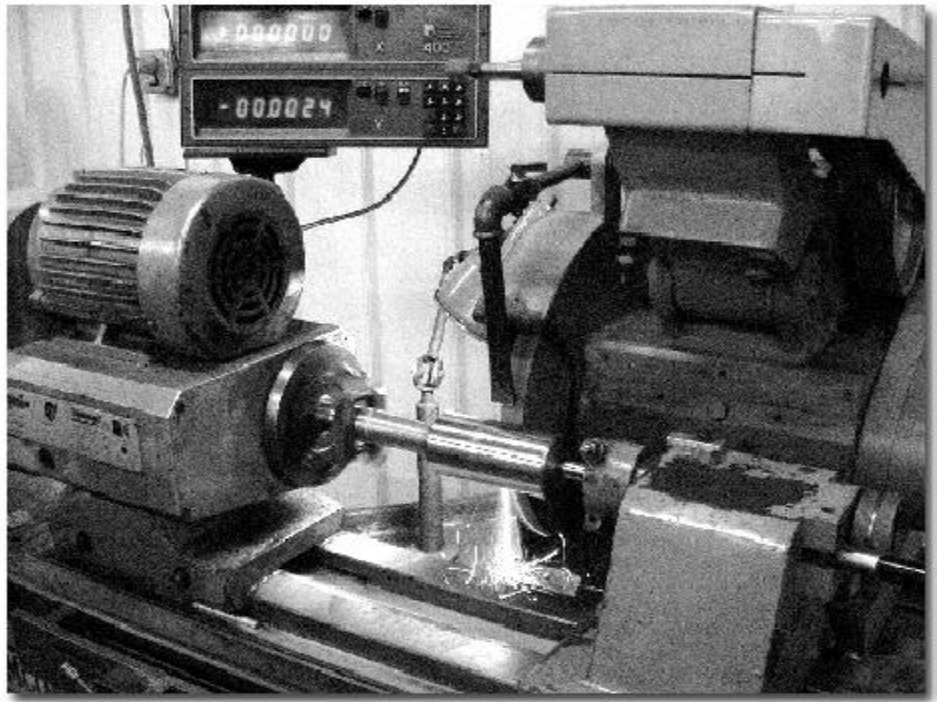
Brach Machine, Inc., 4814 Ellicott Street Road, Batavia, N.Y.

Brach Machine...

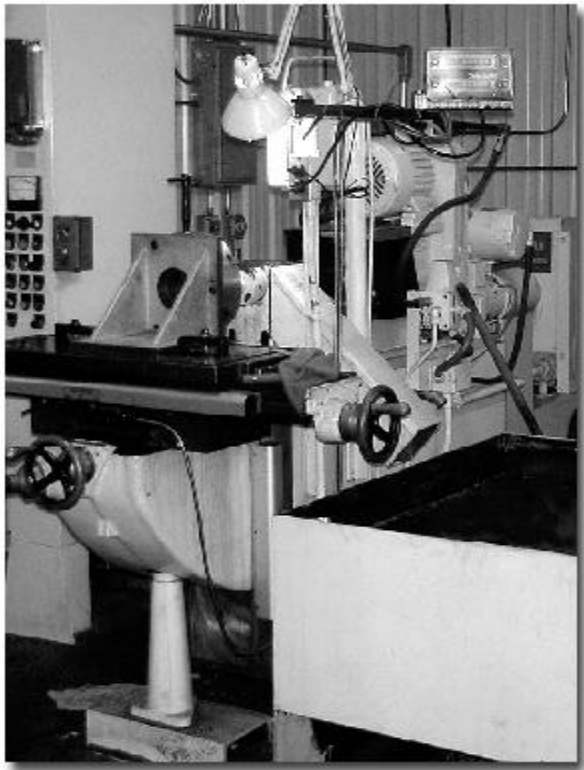
machines. In addition to standard metal cutting equipment, they also have two modern gun-drilling machines, and can drill blind holes up to 48" deep. A cylindrical grinder equipped with a digital readout allows precision grinding to .0001", and an on-site heat treat department allows prompt turnaround for items requiring thermal processing. The most recent addition is a 2500° F. hardening furnace, for high-speed steel products.

"Our specialized equipment enables us to be uniquely competitive in our market. We are able to maintain control over operations that most shops would need to outsource," says Bill. Employees of the 10,000 sq. ft. plant take pride in marketing only products that are manufactured in-house.

Brach Machine maintains a substantial inventory of the certified tool steel and al-



Cylindrical grinder.



Small gun-drilling machine.

loy bar used to manufacture its various shot-end products, and draws on some of the largest specialty steel producers in the world for both raw material and technical support.

Incoming material is inspected, color coded, and checked into inventory, ensuring traceability of each order from start to finish. "We put a lot of effort into controlling our stock of both raw materials and finished goods," says Steve Harvie, production coordinator. "Careful

planning allows us to minimize our lead times without carrying excess inventory. Our goal is to make sure we have sufficient material in stock to meet anticipated customer needs."

Designs That Make Sense

Brach Machine manufactures nozzles, noses, plungers, and couplings for conventional hot chamber machines. The size of



Heat treat area.



A sample of Brach Machine's finished goods.

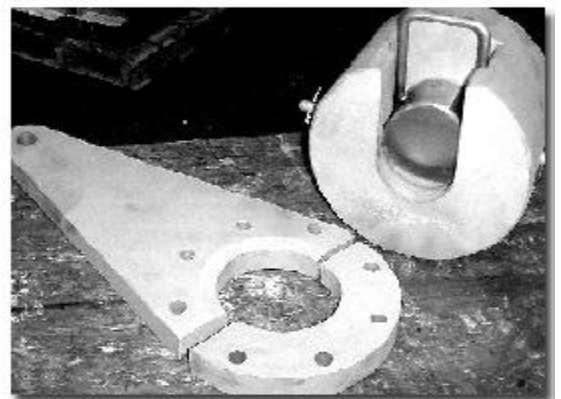
these components can range from several ounces for miniature casting machines, to well over 100 lbs. for larger conventional machines.

Shot rods for cold chamber machines are manufactured on a large capacity CNC turning center. This machine is capable of machining parts up to 80" between centers. Although some manufacturers use smaller equipment to manufacture shot rods, this

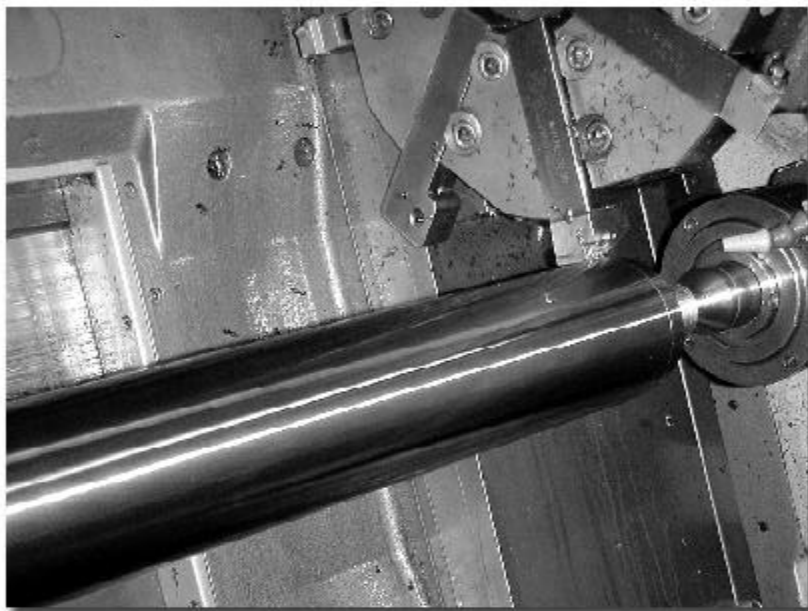
method guarantees concentricity between all critical features on the part. Shot-end alignment is improved, while shot sleeve and plunger tip life are maximized. Brach Machine also reconditions used shot rods, helping to prolong their usefulness. Often repairing the threads, clearing the water passages, and replacing cooling

components will keep a shot rod in service for years.

In addition to more commonly used shot-end tooling, Brach Machine has also developed a variety of custom shot coupling configurations for cold chamber machines. These "quick-change" designs facilitate easy and efficient removal and replacement of the plunger rod / plunger tip assembly, which reduces the loss of die temperature, and the downtime usually associated with changeovers. In addition to these benefits, the custom design approach can be used to address alignment issues, to facilitate the addition of shot control and monitoring equipment, and to optimize shot rod configuration to provide maximum cooling. "We have retrofitted this coupling on machines manufactured all over the world, and improved the performance and durability of the original couplings, all while being



Quick-change coupling.



CNC lathe turning shot rod.

competitive with O.E.M. costs," says Bill. "We work with our customers to develop the design that makes the most sense for their operation."

Better Customer Service

During the recent NADCA Congress and Exposition in Cincinnati, Brach Machines' sales force was updated on the latest products and newest services available to die casters. "Our sales force is on the front line," says Nancy. "The better informed they are, the better service they can provide to the industry. While providing precision parts at a reasonable cost is important to us, we also take the responsibility of customer support and

Brach Machine...

providing technical information very seriously. Bill spends a good deal of his time assisting customers in this way. Some problems, while new to a particular customer, are not unusual and we can often provide

Making Big Strides by Thinking Small

Several years ago, Brach Machine identified another need in the industry and began to research the shot-end technology of miniature zinc die casting machines, in particular four-slide type

machines. Brach Machine was already established as a premier supplier of associated shot-end parts for this type of equipment.

The parts require close tolerance machining of tough materials, and meeting this challenge meant focusing on process control and establishing high quality standards. Continuous improvement has allowed Brach Machine to emerge as one of the most reliable suppliers of these demanding shot-end products. But producing these high quality components was not enough.

Customer feedback indicated there was not a satisfactory aftermarket provider of goosenecks for these miniature machines. Brach Machine recognized the need for a quality source for new and reconditioned goosenecks that matched the precision of their mating parts. This type of gooseneck requires different materials and far greater precision than goosenecks for conventional machines.

Commitment to this project meant the addition of a variety of dedicated manufacturing equipment. Thermal processing, precision bore finishing, and specialized material handling are among



Brach Machine, Inc. booth at NADCA Show 2001.

advice that can help them to eliminate a real headache.”

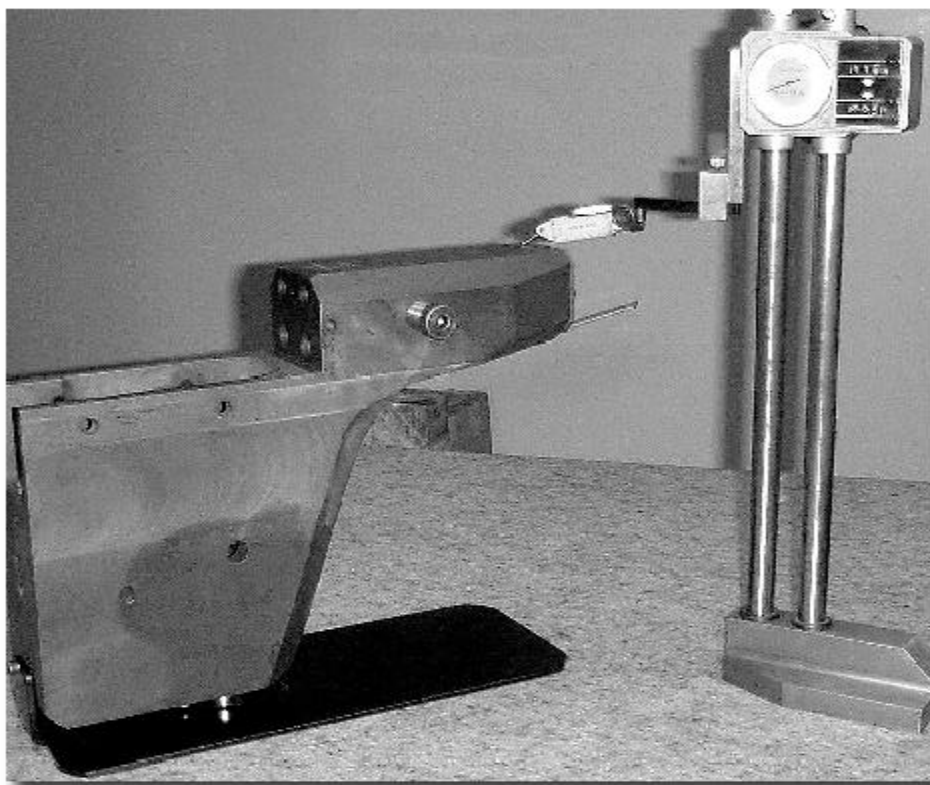
Brach Machine constructed its website with this in mind. In addition to a description of products and facilities, the site also features frequently asked questions, which address common problems, along with their causes and solutions. The site also contains links, which provide technical information from a variety of sources.

While important, technical assistance is just a part of how Brach Machine takes care of its customers. Chad Rudolph, a ten-year veteran employee, gives his view of customer service at Brach Machine. “When a customer calls, and they have a machine down, they know we will do whatever we can to get them up and running as quickly as possible.”

When calling Brach Machine, customers often speak with Julie Mullin. In addition to taking orders, Julie can help customers by checking on order status, tracking packages, or helping with billing questions.



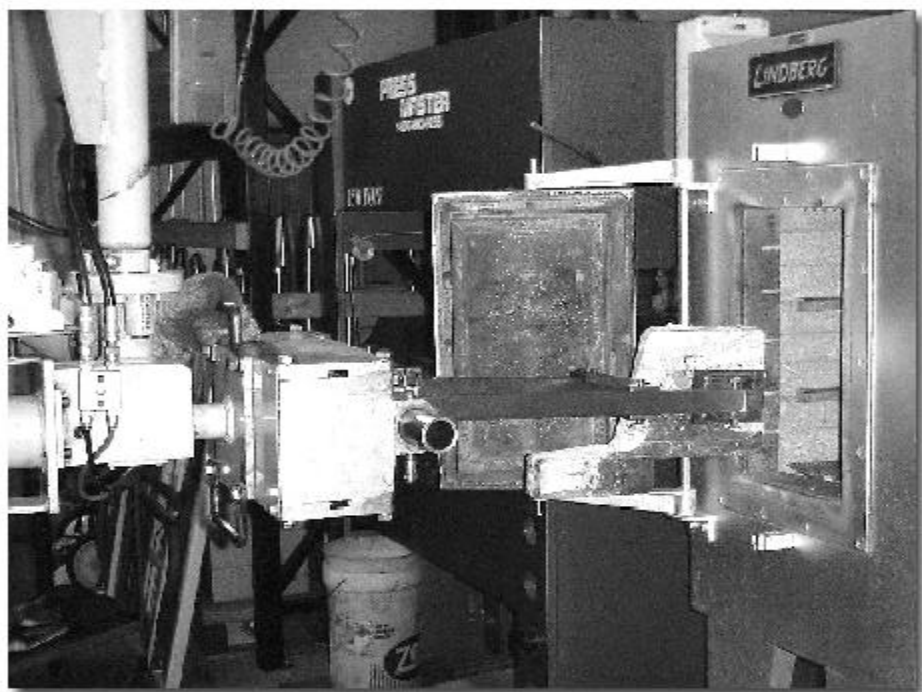
Bill Brach, Nancy Brach, and Julie Mullin.



New gooseneck.

the new capabilities that were added to complete the process. After receiving a

gooseneck for resleeving, the part is logged in, and surface zinc is removed.



Manipulator removing gooseneck from furnace.

The clean gooseneck body is then inspected for obvious flaws that would prevent it from being reconditioned. After the inspection is completed, it is heated to clear any zinc that might remain in the passages, and the sleeves and hardware are removed. This completes the disassembly process, but considerable work remains.

The sleeve bores must be checked for bore size and geometry, and corrected to meet manufacturers specifications. Then, a partially finished sleeve is taken from inventory, and fit to the newly reconditioned bore.

After rough grinding the sleeve to fit the new bore, the sleeves are fully hardened, tempered, finish ground, and honed to provide the proper fit with the gooseneck. The new sleeves are installed into the gooseneck and the sleeve bores are honed once more to give the final fit and finish required.

"There are a lot of steps that we have to take to insure the quality of our finished product, but they all pay off," says Bill. "We are receiving excellent reports on both life and performance of the goosenecks that are in service." Records on each new and reworked gooseneck are on file so that their life can be tracked. By keeping these records, Brach Machine hopes to learn more about the factors that affect gooseneck performance.

Brach Machine will continue to identify areas where its expertise can help support the die casting industry by using common sense solutions, progressive manufacturing techniques, and maintaining its commitment to customer service.

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