

Office Location: Cleveland



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## THE MANUFACTURING EXTENSION PARTNERSHIP IN OHIO

Manufacturing Extension Partnership (MEP) is a nationwide system of services and support for smaller manufacturers to become more globally competitive. At the heart of the system is a network of affiliated, locally-based manufacturing extension centers. Each center, like CAMP, Inc., is a partnership, typically involving federal, state, and local governments; industry; educational institutions; and other sources of expertise, information and funding support.

### COMPANY CLIPS

#### Quality Soars While Costs Drop At Beckett Air

Beckett Air Inc., founded in 1988, is a manufacturer of blower wheels and housings for the HVAC market. The company's 120 employees work at its facility in North Ridgeville. Beckett Air needed to re-evaluate the way its hubs and blower wheels attached to each other to create a stronger construction and assembly process. The company contacted CAMP, Inc. for assistance.

CAMP's Advanced Manufacturing Center (AMC) helped Beckett Air to create a new patented "Lugged Hub Design" for a more robust method of attaching the hub to the blower wheel. Beginning with a finite element analysis, AMC identified ways for Beckett Air to fine-tune its new design and assembly procedures. This new design resulted in a positive attachment of the component parts, eliminating the potential for any type of field failures associated with the hub breaking away from the backplate. With this new design came the decision to vertically integrate and manufacture the redesigned hub in-house. Beckett Air made a significant investment in capital equipment and increased employment to start up the new hub manufacturing department.

AMC engineers then designed and built a series of custom-made fully automated machines for the company, including the first secondary assembly machine for the new hub manufacturing cell. This high-speed automation assures excellent bore quality and reduced the cost of assembly by 59 percent. Other automated machines manufactured for Beckett Air included an automatic staking machine for setscrews prior to their assembly to the hub, and a setscrew insertion machine. AMC staff also developed a fully automatic secondary machine with the flexibility to run the full range of hub sizes and styles produced in Beckett Air's new manufacturing cell. With these machines in place, the company reduced its manufacturing cycle time from 30 seconds to just over four seconds per unit. The company received three U.S. Patents in 2001 for the new attachment design, which effectively eliminates any type of field failures associated with the hub breaking away from the rest of the wheel.

*Continued*

### STATE STATS

DATA\* COVERS JANUARY TO DECEMBER 2001

Number of projects completed  
with firms  
**1818**

Number of firms served  
**540**

Number of firms served for  
the first time  
**129**

Federal cost share for current  
operating year  
**\$2,763,100**

State/other cost share for current  
operating year  
**\$5,526,200**

*\*Data as reported from center*

DATA\*\* COVERS JANUARY TO DECEMBER 2001

Increased sales & retained sales  
**\$47,780,161**

Client capital investment  
**\$24,768,400**

Total cost savings  
**\$16,466,760**

Jobs (created & retained)  
**356**

*\*\*Source: Independent client impact survey*

**For additional information,  
contact Dede McMahon 301-975-5020**



In addition, CAMP consultants performed Lean 101 and 5S seminars, introducing Beckett Air to the major components and principles of lean manufacturing through hands-on learning. These lean principles helped the company reduce its inventory and lead times, and improve the quality of its products,

### **Top Advantage Blitzes Inefficiencies**

Top Advantage, founded in 1994, fabricates and installs DuPont Corian® counter tops. Located in Hartville, the company currently employs five people and recorded annual sales of \$900,000.

During a slow period in Top Advantage's business cycle, the company decided the time had come to enhance operations in preparation for a business upswing. Although Top Advantage anticipated further growth, the company did not want to relocate to a new facility, choosing instead to make its current facility as efficient as possible. However, Top Advantage needed guidance on the creation of a new plant layout and a method for obtaining employee buy-in. The company's wholesale distributor, L.E. Smith Company, recommended CAMP, Inc. as a valuable resource that could help Top Advantage meet its goals.

CAMP consultants worked with the Top Advantage staff to conduct a kaizen event, an exercise designed to eliminate all non-value-added activities on the plant floor and increase the company's productivity, turn-around times, and quality. Using the principles of cellular manufacturing, CAMP showed employees how to integrate lean manufacturing concepts directly into their work cells. With a high level of employee involvement and influence, support for the plan fell into place. Following the kaizen event, CAMP created a new plant layout that was approved by Top Advantage management. In a short 12 hours, staff had transformed the facility into an example of manufacturing excellence. Additional improvements include a 33 percent reduction in lead-times, a 20 percent reduction in work-in-process, a 10 percent improvement in space utilization, and a 30 percent increase in productivity.