



# Foundry Core Room Study

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## PROJECT SUMMARY

The core room initiative was required to determine the minimum core inventory required while maximizing the output of completed core packages for the mold line. The client, a major automotive powertrain division, asked PMC to conduct the foundry analysis.

## SYSTEM DESCRIPTION

The four-cylinder core package consists of six different cores being made on four different production lines. Each specific sand core type has its own production, scrap, and equipment failure rates. The cores are brought to an assembly line. The assembled core package is then transported to a shared mold line for casting.

## OPPORTUNITY

The core room production volumes were not meeting customer requirements as a result of slow cycles, component (feeder core) shortages, scrap, and equipment downtime.

## APPROACH

The project was undertaken to increase productivity while minimizing capital investments. More specifically, the objectives were to:

- Stabilize production system
- Identify and eliminate bottlenecks
- Effectively manage/control WIP inventories
- Increase equipment up-time
- Develop a production scheduling tool.

## SOLUTION

The first task was to stabilize the system so it could be analyzed. This was accomplished through standardizing cycle times and establishing management of part banks. Using a predictable process, statistics were gathered and a Witness simulation model was created to determine minimum and maximum values for appropriate part bank sizes. A production-scheduling tool utilizing current production requirements, work-in-process inventory levels, downtime, and scrap information, was created to further increase production efficiency.

## BENEFIT

Through maintenance, cycle time improvements, scrap reductions, and management of work-in-process buffers, a potential increase of \$30,000,000 in gross sales capacity was achieved.