

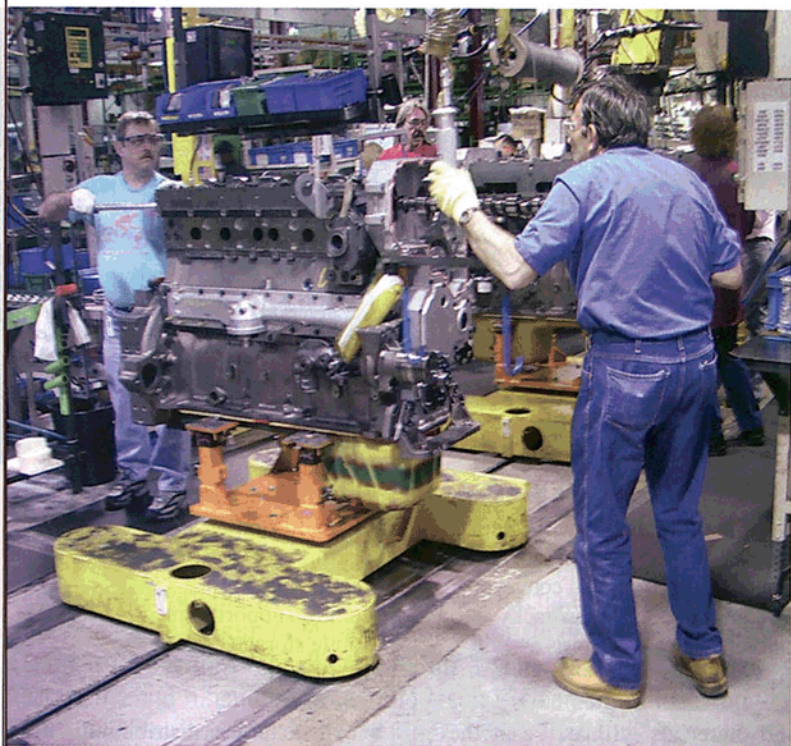
# Flexible Engine Assembly System Aces First Test During Changeover

In October 2002, Cummins Inc. decided to consolidate its heavy-duty engine assembly and test operations at its Jamestown, NY, engine plant. The decision called for transferring assembly and test activity to a new towline system.

"The new assembly system was purchased to replace a basic in-floor towline system that was installed in the early 1980s. The new

operational to meet the ongoing production demands without disrupting product flow, quality and facility cleanliness. SI developed a system layout using a phased-installation approach. Transfers between the existing and new towline allowed the original system to remain functional after the new system was complete.

Retention of the original system was not a requirement during the planning stages of the project, but its potential use as a buffer area between assembly and test operations provided additional flexibility at no additional cost.



Cummins selected SI Systems to install a new towline-based assembly system.

system is not significantly different conceptually from the earlier process used for the 11-liter product assembly. But it required significant advances in overall size, control system architecture, operator safety, ergonomics, flexibility and integration capability for advanced assembly equipment and fail-safing hardware," says Gene Wilston, group leader of assembly operations.

Cummins selected SI Systems (Easton, PA), a manufacturer of towline-based assembly systems, as its partner and systems integrator.

A major challenge was developing a plan that would keep the existing assembly line

**The new assembly system . . . required significant advances in overall size, control system architecture, operator safety, ergonomics, integration capability and flexibility.**

**—Gene Wilston, group leader of assembly operations**

The main assembly segment of the new 1,500-foot-long towline has 70 stations. A stop at each station allows for either synchronous or nonsynchronous transfer of engines between stations. In addition to the main assembly segment, three powered repair spurs contain four workstations each and allow product to re-enter the assembly line after repair. A fourth spur near the end of the assembly segment contains 11 stations to accommodate low-volume options, such as engine brakes and power takeoffs. The original system had no repair or options spurs.

The towline assembly system starts by receiving an engine block from the initial assembly line. The engine block is then populated with a crankshaft and cylinder liners. The towline cart receives the engine block from a powered roller conveyor.

