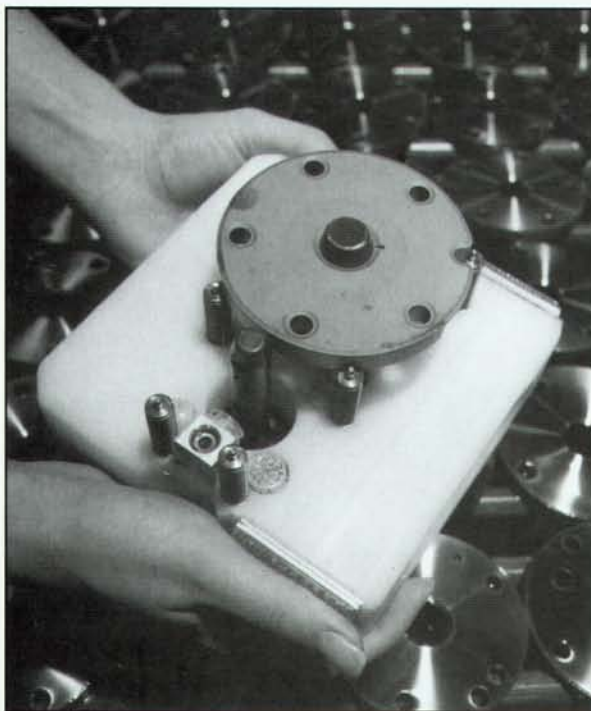




Problem: Incorporate precise pick-and-place capabilities into the design of an integrated machining operation.

Everite Machine Products Co. is a manufacturer of electrochemical machine tools in Philadelphia, Pennsylvania. One of their customers, a major manufacturer of air conditioner parts, was faced with a very expensive equipment upgrade. Rather than purchase new equipment for the upgrade from Everite and continue machining the parts themselves, the customer asked Everite to process the air conditioner parts on a contract basis.



Two hundred pallets are tooled to accommodate all part configurations.

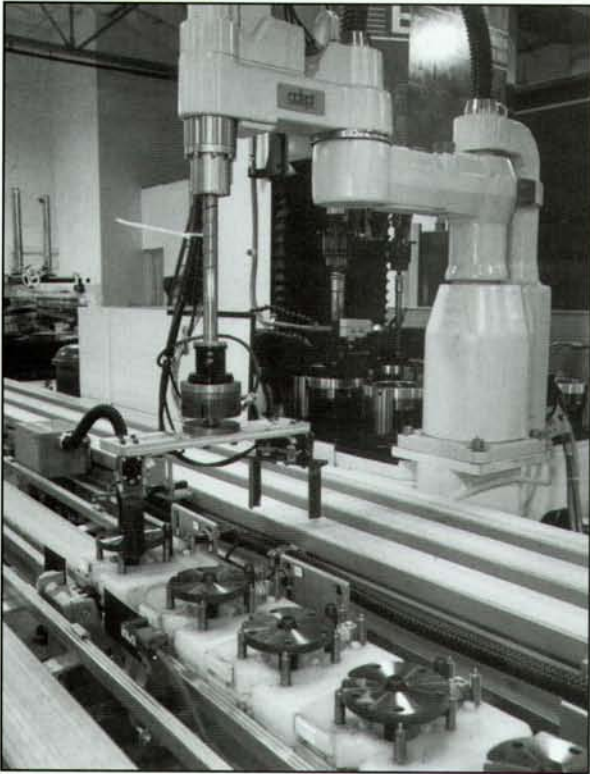
Process requirements

The parts involved are the top and bottom flanges of air conditioner compressors. The machining process starts with polishing and grinding of the seat, then flipping the raw blank part; turning the part on a lathe; deburring; honing; and lapping each flange. The customer's specification for the flatness of the flange surface is 50-millionths of an inch. To meet that exacting specification and to duplicate it in four million parts a year requires a carefully designed, fully automated manufacturing process that includes a pallet system capable of supporting precise "pick and place" material handling and state-of-the-art machining operations. Since production of the flanges is expected to increase, it is also necessary to have a conveyor system that can easily "grow" to accommodate more lathes.

Along with Tarcon Control Systems, Everite's control systems division, Everite was confident that they could offer the customer not only machining expertise, but also a fully integrated, computer-controlled, precision manufacturing service. All that was needed was a conveyor system with accurate pick and place capabilities and the flexibility to expand, if necessary.

Solution: FlexLink® XM Pallet System

After speaking with several conveyor manufacturers, Everite's Engineering Manager found that FlexLink offered just what he was looking for: customizable pallets, accurate pallet indexing, position sensors, accumulation capabilities, and the flexibility to reconfigure and grow as production needs increased. The outstanding reliability of FlexLink systems was also



Using FlexLink components, Everite created a fully integrated, computer-controlled manufacturing process that incorporates precise, automated "pick and place" material handling and state-of-the-art machining operations.

important, as production takes place around the clock, day after day. Other considerations included the ready availability of FlexLink conveyor components and FlexLink's ability to offer on-site installation. Everite had only four months after signing the contract with their customer to get the entire system purchased and up and running.

Construction and installation

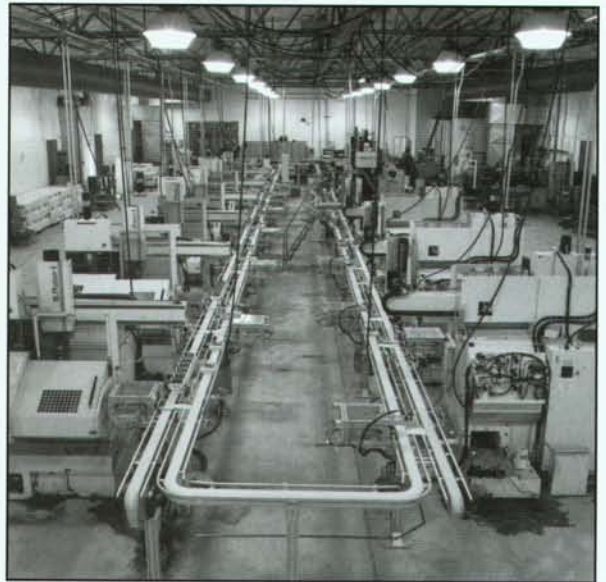
As constructed at Everite, the FlexLink XM system now consists of a 300-foot loop and two local lanes for accumulation. One local lane is 150 feet long and one is 75 feet long. Two hundred pallets are tooled to accommodate all part configurations and run continuously on the conveyor, from the initial "roughing" operation at the first lathe to the conclusion of the

honing operation. At that point, a robotic arm picks each flange from its pallet without touching the delicate flange surface and puts it in position for the lapping operation. The entire manufacturing process takes about six minutes: three minutes machining time plus three minutes travel time.

Outstanding results

The improvements over the manufacturing process previously used by Everite's customer are dramatic. Only eight people are needed to operate the new system — a tremendous reduction in labor. Statistical quality control can now be employed rather than 100% verification, resulting in a huge savings in time and money. And because of the precise positioning provided by the FlexLink pallet system, process capability is no problem and there are virtually no rejects, so a higher volume of quality parts is produced.

Less labor, increased production, better quality. Those are three important reasons Everite Machine Products Co. is pleased with their choice of a FlexLink conveyor system to get their new manufacturing operation up and running.



The XM conveyor and pallet system installed at Everite consists of a 300-foot loop and two local lanes for accumulation — one 150 feet long and the other 75 feet long.