TELESIS
TECHNOLOGIES, INC.

TMM7200 Marks Heavy Equipment Bearing Caps and Rail Pans Simultaneously

A leading heavy equipment manufacturer needed a marking system to mark location numbers on engine bearing caps and pan rails. The seven bearing caps and three pan rail locations were spaced too far apart for a normally configured marking head to imprint them within the time allowed by the production line. The customer also wanted easy access to the marking head for maintenance operations.

The TMM7200 Marking Head/Manifold Assembly in the downward facing, marking orientation.

Telesis Custom Engineering Team configured a TMM7200 Marking System that allows the customer to mark in all ten locations simultaneously. The heavy-duty TMM7200 marking head was designed with a custom poppet manifold and ten individual single-pin cartridges arranged to match the mark locations on the engine block. The large, size 150 marking pins were selected to mark the cast steel engine block pan rails and bearing caps.

To address the maintenance accessibility requirement, the marking head/manifold assembly is mounted on a custom-designed bracket. The bracket is hinged, allowing the marking head to pivot 90° from its normal, downward facing marking orientation, affording easy access to the impact pins. As an added safety feature, a Lexan® shield surrounds the manifold assembly.

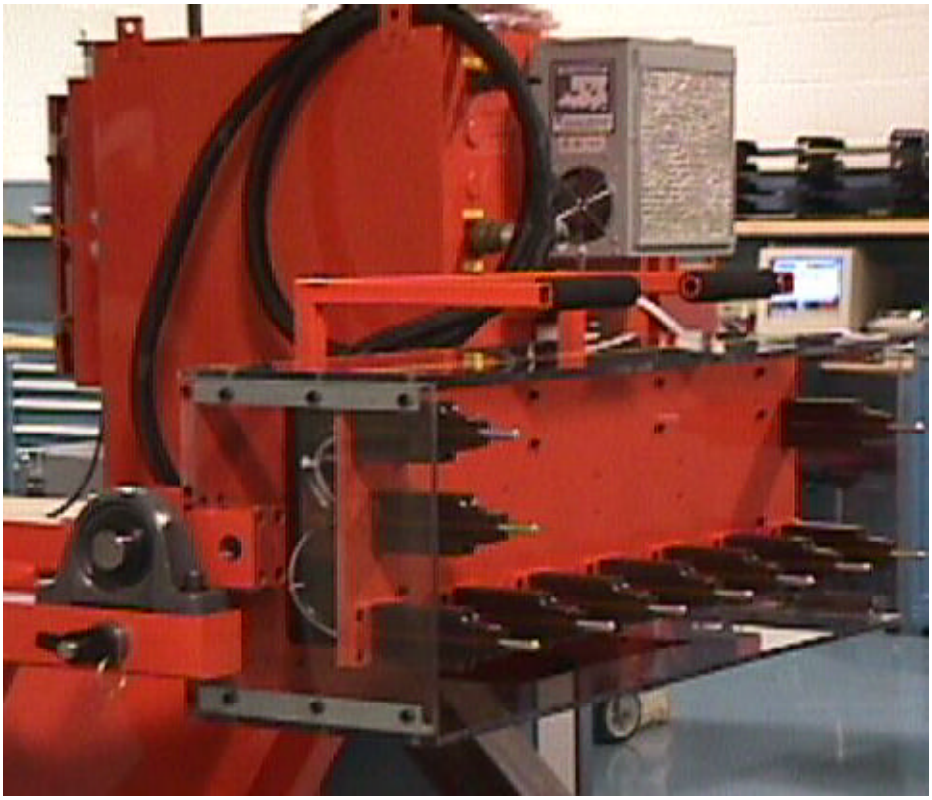
The electronic components, including the SVGA monitor, keyboard and TMC700 controller are nearby in a wall-mount style, NEMA-rated enclosure. The windowed enclosure also features a red and green stack light that alerts the operator whenever plant air pressure drops below a predefined limit.

This is how the system operates:

1. When the system is turned on, the software automatically loads the bearing cap/pan rail marking pattern. The plant shift code, which has been defined in the marking system software, is automatically invoked at startup.
2. The TMC700 controller sends a discrete READY signal to the customer's production line controller.

3. The conveyor indexes an engine block into the marking station.
4. An optical sensor on the marking head assembly sends a PART PRESENT signal via the TMC700 controller to the line controller.
5. The line controller issues a GO signal the to TMC700 controller.
6. The TMC700 controller issues a START PRINT command.
7. The TMM7200 marks a single character on each of the seven bearing caps and in three locations on the pan rail.
8. When the marking cycle is complete, the TMC700 DONE output changes to TRUE.
9. The TMC700 sends a READY signal to the line controller.
10. The marked engine block indexes out of the marking station, and an unmarked block enters.

The NEMA-rated control console houses the



This customer needed an efficient way to automatically mark extremely large engine blocks. Telesis supplied the solution—a fully integrated marking system requiring minimal operator intervention. The easily maintained system safely and accurately marks in ten widely spaced locations at production line speed.

Head/Manifold Assembly is locked in the forward fac-

tion, making the ten individual pin cartridges easily