# Cast Metal & Diecasting Times





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# Using today's technology to be more productive

With the advent of industrialised hardware technology, foundry specific applications are being developed to help foundries meet the needs placed on them by customers. No longer are foundries just being required to simply ship castings. Certifications, advanced ship notifications, serial numbers and quality information are some of the demands now faced. By taking advantage of today's technology, it is possible to provide this information using the ERP system, known as the Guardian Foundry System.

Email is one of the most common technological advances used in business today. It has changed the way companies communicate and revolutionised how they conduct business. Information can be dispersed immediately with the push of a button. Sending out the physical document can be costly; paper, envelopes, ink and postage are all expensive components, making email a more cost-effective solution.

The Guardian Foundry System uses email throughout the entire system, ranging from order acknowledgements, purchase orders, return authorisations and invoices. The system's Advanced Ship Notification feature will automatically send an email notification at the time the shipping process has been completed.

The internet, a global system of interconnected computer networks and the World Wide Web, a service that runs the internet, are two technological advancements used worldwide. Web pages that may contain text, images, videos and other multi-media are available to view via the World Wide Web. Guardian Software Systems has developed an application entitled the e-Commerce Web module. This module allows the customer to:

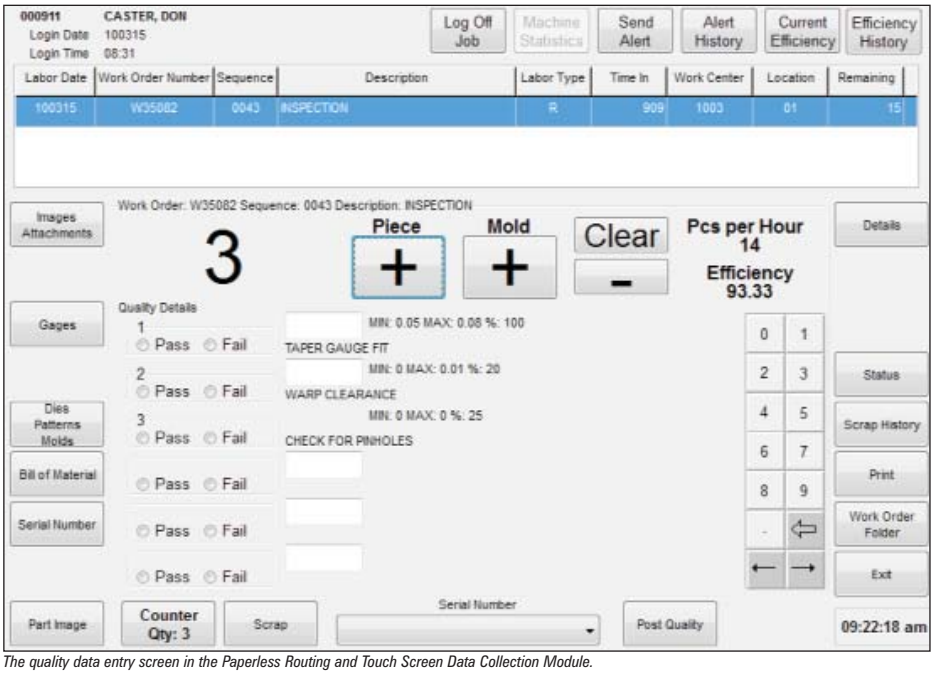
- View their profile.
- Search by casting number.
- Search by purchase order.
- View 'customer specific' open purchase orders.
- View current price list.
- Order products through the use of standard 'shopping cart' technology.
- Confirm an order via email.

*Examples of wireless Thin Clients.*

## Shop floor necessity

It is commonplace to see personal computers used in business for multiple complex tasks such as accounting, inventory control, customer management, shipping control and financial analysis. Personal computers are now no longer limited to office personnel; it has become a necessity for shop floor employees to have access to computers. Whether it is a personal computer or a 'thin client', placing computing power on the foundry floor now provides a wealth of opportunities for collecting and viewing data.

Using Thin Client Technology is beneficial for foundries due to the harsh environment. Thin clients are fan-less and disk-less devices which run embedded operating systems on low-powered hardware that utilise solid-state storage and no moving components. They may be connected to the network through traditional Ethernet cabling or utilise wireless technology.




*The quality data entry screen in the Paperless Routing and Touch Screen Data Collection Module.*

These workstations provide the ability to report labour in a real-time fashion, utilising the Standard Data Collection System or the Paperless Routing and Touch Screen Data Collection System. Both methods help in the collection of labour and scrap reporting, serialisation and traceability and the capture of quality characteristics.

## Instant information availability

The standard data collection method is intended to provide enough workstations, eliminating the need to walk around and waste valuable time on the shop floor. Once an employee logs into the plant and onto a work order, the information becomes available immediately. Managers can view real-time information, including who is in the building and what they are working on. They no longer have to wait until the end of the day to view daily production and scrap. Strategically placing workstations throughout the foundry ensures that they are accessible for multiple users to access.

Process Sheets are paper documents that travel with the part throughout production. These documents contain pertinent work order information, along with detailed instructions and images on how to perform the routing sequences. In addition, there are barcodes associated with each routing sequence for the employee to use for logging in and out of work orders within their department. These barcodes, in conjunction with a bar code scanner, increase speed and eliminate errors throughout the data entry process.

Process Sheets that contain images may significantly increase the size of the document. Guardian Software Systems addresses this issue by offering the Paperless Routing and Touch Screen Data Collection module. Positioning a workstation and touch screen monitor at every machine will not only provide Process Sheet information at the touch of a finger but will allow the operator to interact with the Guardian Foundry System more effectively. The operator can do such activities as track scrap, count pieces and record quality details in real-time.

The system also provides a Serial Number Tracking feature, which allows for serialised parts to be tracked throughout the course of the manufacturing process. This feature will track all serialised parts, or can be limited to serialised parts that deviate from the original process. At the time of shipment, a list of serialised parts is provided to the shipping department. Once selected, the serialised parts will be automatically added to the packing list.

The Guardian Foundry System's latest feature provides the ability to define and record quality

attributes. Attributes may be linked to a specific routing process or several attributes can be consolidated to one routing sequence for a single step inspection procedure. Characteristics are then defined for each attribute, such as serial numbers required, specifications needed, check percentage and is the test qualitative (pass/fail) or quantitative (min/max). Users can report the results through the Paperless Routing and Touch Screen Data Collection Module. The results will be linked to the work order and made available for reporting.

### Gathering information

Guardian Software Systems is continuously researching different ways to gather information. The technology of today has made it possible for the Guardian Foundry System to communicate with a variety of machines, robots and even sensors. An example may be as simple as communicating with a spectrometer to capture heat composition for certifications or as complex as working with a manufacturer to capture specific machine data from a PLC. The company joined forces with MPI Inc to help customers improve the manufacturing process, while maintaining quality. MPI's Touch Screen Smart Controls provides key information, pertinent to the injection process. It also allows the storage and transfer of job parameters between the Guardian Foundry System and injection presses, guaranteeing the same process is followed each time the job is run.

Guardian Software System's Paperless Routing and Touch Screen Data Collection module works collectively with the touch screen technology, built into the MPI press, omitting the need for additional hardware. This integration effort allows users of both systems to automatically capture data collected by the press, as well as view injection press settings stored in the Guardian Foundry System.

*MPI's Touch Screen Smart Controls, running the Guardian Foundry System.*

Guardian Software System's PLC-less interface feature offers an additional method for collecting data from devices located on the floor. It is no longer necessary to have a PLC in order to track data, such as temperature, humidity, runtime and event counts. This feature allows sensors to feed information to the system in order to monitor data. This data may then be used to generate reports, graphs and automatic email alerts.

The company offers a wide range of functionality through the Guardian Foundry System by continually evaluating the latest products and researching ideas. Through this effort, Guardian Software Systems is able to provide customers with a technologically advanced, foundry specific ERP solution.

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