



VERTICALISED PLASTIC MOULDING



LEADS YOU IN
INDUSTRY 4.0

- **MONITORING.** Real-time display of the status of all the presses and finishing centres, with details of current production, current dies, number of items made and still to make, production rate and current stoppages.
- **OPERATOR MANAGEMENT.** Recording of the activities of field operators on a press. Each operator has a badge showing which press he is working on. The system can record the activities of the operator on one or more presses simultaneously.
- **SYSTEM ACCESS.** System access and interaction rights and passwords can be configured centrally for each operator.
- **FIELD OPERATOR STATEMENTS.** Operator interaction with the PRD+ is reduced to a few simple statements via a barcode reading:
 - Activation of a new die-in-press sheet by scanning the barcode on the die sheet or selecting it from a displayed list.
 - Statement of an operator's presence start/end on a particular press, by scanning the barcode on the operator's badge.
 - Statement of the cause of a reject by barcode or key.
 - Statement of the cause of a stoppage by barcode or key.
- **PRODUCTION ORDER MANAGEMENT (DIE SHEET).** The PRD+ can be used to import production orders (POs) from the management system or define them locally. For each press, the user can define a DIE SHEET associated with the number of items to make, the name of the die, and the PO (or article) to be made with the cavity. It is also possible to define an unlimited number of cavities per die and freely associate with each cavity which PO or article will be made at each stroke.
- **PRESS LOAD.** The STAIN+ displays the load of each press based on defined die sheets, taking the shift schedule and efficiency into account. This tells the operator when each production batch will end and gives the client a prompt and precise answer.
- **PRODUCTION ORDER STATISTICS.** The STAIN+ displays for each cavity the number of items made compared to those still to be made, actual production tooling and downtimes, performance, productivity, and the die and matrix used, allowing a prompt analysis of the production costs for each job order.
- **PRESS DATA COLLECTION.** Using standard, modular and expandable SIEMENS™ PLC technology, the STAIN+ automatically records production, tooling and downtimes, the number of items produced and production events for each cavity of each press.
- **DOWNTIME MANAGEMENT.** The STAIN+ automatically records downtimes (start and end) for each press, including micro-





stoppages. Advanced analysis functions provide stoppage incidence reports by type of stoppage, department, press, operator, batch, PO and job order.

- **TOOL MANAGEMENT.** The STAIN+ automatically records die-changeover times and items made, before the press can resume production.
- **REJECT MANAGEMENT.** The STAIN+ allows extensive configuration of individual causes of rejects. The field operator can declare a reject in real time on the machine, by pressing buttons associated with particular reasons, or at the end of the shift, using a PC or handheld terminal. Reject trends can be monitored by item, job order, PO, period, shift, machine or department, with detailed reporting to highlight reasons for high-incidence and their trends.
- **MACHINE LOG BOOK.** The operator can compile on the departmental PC a shift changeover spreadsheet (log book) showing all the information it is deemed useful to share.
- **AUTOTESTS.** With this module, autotest plans can be defined for each article/machine. STAIN+ automatically generates requests for the operators and records the result.

- **INTERFACE WITH THE MANAGEMENT SYSTEM.** A standard method is provided for exchanging data with SQL tables defined on STAIN fixed layout databases in order to import details of each production order and update output figures, production times and downtimes, operator activities and rejects.
- **COST ANALYSIS PER ARTICLE.** The STAIN+ provides specific reports for determining the production costs of each article by analysing the labour and machine times used, and for the continuous updating of standard times per article/machine.
- **REPORTING.** The system provides multiple data querying options to allow the calculation of performance, efficiency and productivity, using numerous powerful preconfigured filters for point and period analysis by factory, department, press, die, cavity, article, production order, operator, batch, shift and so on.
- **CONFIGURABILITY.** Complete parameterization of the system with dynamic configuration of departments, machines, tree charts of the causes of stoppages and rejects, shift calendar, shift activation, and data acquisition times and methods.
- **DATA EXPORTABILITY.** All the data presented on the various query grids can be exported to Excel at a mouse click.



MODULES THAT CAN BE INTEGRATED WITH PRD+ 360° COVERAGE



OPR+
Management of operator indirect activities



SCT+
Technical Sheets (Receipts)



LGT+
Department logistics



CNS+
Energy Consumption



ATC+
Auto-tests



APP+
Process Parameter Acquisition



SPC+
Statistical Process Control



MTZ+
Run-to-failure and predictive maintenance



STP+
Mould, die and insert management



CM+
Full machine capacity