

CASE STUDIES

DERBI

SUSTAINING PRODUCT QUALITY AND REDUCING COSTS THROUGH FLEXIBLE LINE BALANCING

In the highly competitive motorbike market it is essential that well designed products are produced to the highest standards whilst at the same time reducing costs in order to offer lower priced products.



DERBI DRIVE DOWN PRODUCTION COSTS AND OFFER HIGH QUALITY PRODUCTS AT COMPETITIVE PRICES USING KRONTIME

DERBI's Spanish assembly site is situated approximately 20 kilometers north east of Barcelona. Around 300 staff are employed at the site which makes small engine motorcycles that include scooters and off-road mountain bikes. Owned by Piaggio the factory is primarily engaged with assembly and finishing (the process of painting and applying decals).

SUPPORTS A CONTINUOUS CHANGING MARKET AND CHALLENGES

In the past, the factory also made parts and components but now these are purchased from third party suppliers. Piaggio supplies the engines to the Barcelona site where assembly of a wide range of bikes takes place. This change in operation has brought with it a number of challenges that require DERBI to quickly reconfigure its 4 assembly lines to meet rapidly changing demands for different product models. Previously lines would be set-up to, assemble batches of around one-hundred of a given model. Today lines are configured to produce batches of ten or so at a time. This requires rapid tool changes and modifications to logistical activities in order to deliver the correct parts and equipment to the line. Of key importance to DERBI's business is the ability to assemble a large number of different bikes at low cost.

For a new bike to go into production DERBI process engineers must first understand what the new bike will require in order to be built. Comparisons are made with existing process plans to establish which operations can be reused. Process plans are updated to define the required operations, tools and the materials needed. Once this has been done an evaluation is made to determine the cost (time) of the process and the number of workers needed. To perform these critical activities DERBI uses INS's Krontime manufacturing software solution.

DERBI's products are sold worldwide using a network of preferred intermediaries and resellers. To be successful in a very competitive market DERBI must continually monitor and control a number of business critical success factors that include: efficient assembly, product quality and costs.

KRONTIME, A CRITICAL BUSINESS COMPONENT

Krontime is used to support a number of business critical areas that include:

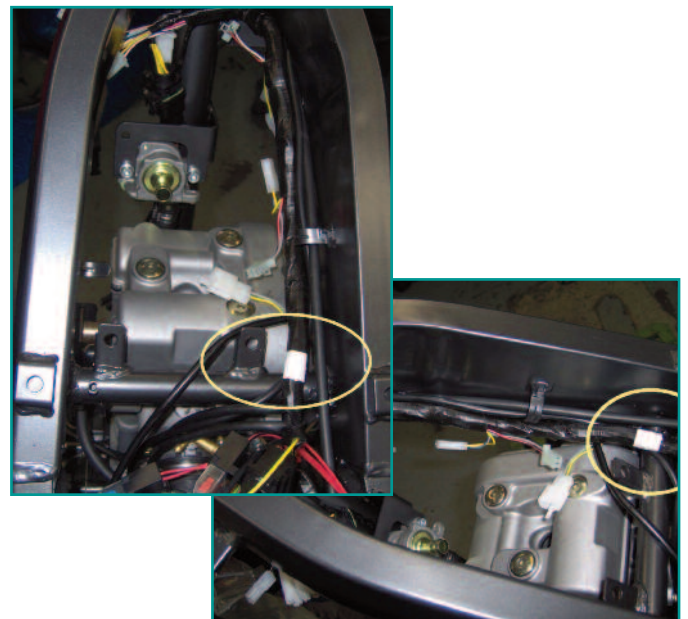
- Transferring Bill of Materials (BOM) from SAP into Krontime which is used to assign parts to operations. Krontime helps identify problems and where parts are needed, e.g. missing parts or incorrectly assigned parts
- Defining how workers need to do the assembly tasks
- Maintaining information for all products with the ability to reuse proven processes which Krontime holds for each bike produced
- Analyzing processes to identifying areas that can be improved, (cost of assembly = total of activity times)
- Reducing component costs, Krontime informs logistics about the materials needed and where they are used
- Anticipating demand for parts, comparisons with other processes already defined can help identify discrepancies and inefficiencies

COMPREHENSIVE SOLUTION AND STRATEGIC PARTNERSHIP

DERBI currently employ a number of Krontime applications that include: Line Balancing, Standard Operations and Web based Work Instructions. Prior to using Krontime DERBI employed spreadsheets to plan and define assembly processes. After a review of several other companies using Krontime DERBI made the decision to implement the solution at their Barcelona site where it has now been in use for a number of years.

Rebalancing assembly lines, using spreadsheets, was a difficult and time consuming task to perform that was also prone to error. Using Krontime has made this a simple, fast and accurate process. New assembly requirements can easily be compared with existing line balancing models. Planning the introduction of a new model of bike is made easier as standard operations can be reused, pre-defined BOMs quickly retrieved and operations updated. Recalculation of the assembly time and the number of workers needed together with quantities of materials required is automatically performed by Krontime.

Using integration software developed by INS operation times and information about materials is transferred from Krontime to SAP. Other interfaces send data to logistics about the parts required and the paint section, who receive documentation defining finishes and the type and location of decals to be applied.



DERBI operate constant speed continuous flow production lines. Products are assembled by hand around the engine which is mounted within the bike frame which in turn is used to transfer the assembly down the line. At the end of the assembly lines bikes are transferred, by winch, onto a merge line. Batch sizes are typically around ten bikes of the same model at any one time. Normally the four assembly lines are reconfigured once a week. In the past planning was done using a 6 month production cycle, today this is carried out on a weekly basis. A shorter planning horizon impacts the logistics required for materials provision and the frequency that lines need to be rebalanced.

IMPORTANT MEASURED BENEFITS

Without Krontime DERBI would not be able to: respond to a highly dynamic product mix, reconfigure lines quickly, accurately determine assembly times, assess labor effort, define the materials used, and identify the tools required. Product quality is also enhanced by the use of proven operations and faster assembly processes allowing more time for inspection and correction. Resource (people, materials and tools) utilization is more effective and significant improvements in data accuracy are some of the key advantages that Krontime brings to DERBI. Using Krontime DERBI have been able to improve productivity by up to 30%



Krontime is a tool to help manufacturing companies improve their day-to-day operational efficiency. It provides features to improve performance and increases the flexibility of production processes enabling companies to respond to changing market demands and evolving customer requirements. It is important for manufacturers to adopt the right software tools to help improve their business competitiveness. Using Krontime, operations and processes can be standardized which increases performance and maintains quality. A centralized database provides one source of up-to-date and proven information that can be compared updated and reused. Knowing the materials needed and where they are required also helps reduce costs, improve quality and raise productivity on the shop floor.

DERBI have plans for further business improvements using Krontime. These include optimizing and upgrading the existing interfaces between SAP and Krontime to be able to more easily identify the source of BOM errors and the use of standardized work instruction sheets on the assembly line to communicate materials, operations, tools, methods and other required information. Krontime will take overall control of managing more effectively the way internal documents are distributed and utilized.

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