Q-S_MET

Process simulator for the LRF, VTD and VOD

BENEFITS

Rapid experimentation of variations in process start and end conditions

Process timing and consumption predictions

Improved process knowledge and management

PROCESS

Danieli Automation Q–S_MET is an advanced process simulator for the LRF, VTD and VOD processes.
Q-S_MET predicts how the LRF process should be conducted in order to meet the time and temperature targets set for each.
Knowing the relevant parameters as practice and steel grade ID, required end temperature, and process duration, the simulation generates the calculated trends for each process step.
For VTD process, the needed vacuum time is also evaluated.
The VOD simulation calculates as well the proper oxygen blow time and pattern.
The Q-DI/Jominy optional function is particularly useful for special bar production and scrap charging practices. It can:
> Calculate the DI and/or Jominy values for various analyses and display them to the operator;
> Calculate the optimal aim analysis to be used to continue the heat in order to attain the DI and/or Jominy targets set for it, or else report on why such cannot be determined;
> Indicate those production orders in the production program that have unfeasible DI/ Jominy targets.

EQUIPMENT

The typical HW configuration of the Q-S_MET standalone system is very simple, as it just requires a PC to run the process simulator and an operator terminal.
If a Danieli L2 server is available, this application runs on the existing server, using the L2 DB data (either directly or as a DB copy) and the operator can run process simulations with Q-S_MET at the system PWS PC.
The simulation output can be displayed in three groups of multiple graphs: Temperature, Power and Analysis.
In the OWS are shown the temperature-related graphs generated by the simulator: temperature, superheat and liquidus temperature.

Calculation results plotted after the simulation.

Q-S_MET simulation results regarding steel analysis, slag analysis, process variables and materials additions.