

Press Release

September 5, 2014

DMG MORI Going Green with New Energy-Saving Functions

DMG MORI SEIKI CO., LTD. (hereinafter called DMG MORI SEIKI) is pleased to announce the company has developed energy-saving functions that enhance machines' environmental friendliness. The functions are incorporated in DMG MORI machine tools equipped with CELOS, a newly developed machine tool operating system.

DMG MORI SEIKI has focused on energy saving in an effort to conserve the limited resources and beautiful environment of the earth. Recently, we have successfully improved energy efficiency of machine tools by optimizing various machine functions, increasing operation efficiency and developing new functions to reduce cycle times and power consumption during automatic operation. With these energy-saving features, DMG MORI machines will transform into next-generation machine tools that bring both greater productivity and energy savings to our customers.

The following is the outline of our energy-saving features.

1. Power-saving Functions

- **Inverter-controlling coolant supply**

Coolant supply volume can be adjusted according to the machining load to minimize unnecessary coolant discharge during standby.

- **Power shutoff function (Patent pending)**

The power of channels in the standby mode is shut off with M codes.*1

- **Energy-efficient components**

The latest, low-power-consumption components and LED lighting are employed.

2. Cycle Time Reduction for Lower Power Consumption

- **Optimized M codes**

The next M-code command can be specified before the previous command is completed. This enables multiple operations to be overlapped, resulting in shorter cycle times.

- **Acceleration/deceleration control for spindle and servo motor (Patent pending)**

This is our original technology that enables optimal acceleration/deceleration control by automatically adjusting positioning speed in accordance with the spindle acceleration/deceleration time.

- **Faster ATC (Automatic Tool Change) operation (Patent pending)**

The spindle starts acceleration at the same time as the ATC arm moves away from the spindle to minimize waiting time.

- **Shorter machining time in canned cycle (Patent pending)**

The number of pecking movements*2 in a deep hole drilling cycle is automatically controlled to reduce machining time.

*1 M codes are used to control the start and stop of spindle rotation, coolant discharge, etc.

*2 Quick retracting movements of the tool to break cutting chips into smaller pieces.

3. Visualization of Energy-saving Effect and Power-saving Setting with CELOS

Energy saving effects can be monitored on the CELOS screen.

- **Efficiency monitoring screen**

The total time of each of the three machine states (Standby, Ready to operate and Processing) since machine installation can be shown in a pie chart.

- **Energy monitoring screen**

It displays the power consumption (kWh) of each machine state.

- **CO₂ monitoring screen**

It displays the CO₂ emissions (kg) of each machine state.

- **AUTO shutdown screen**

On this screen, the user can set the turn-on/off time of the screen, machine light and machine power.

4. Effect of Energy-saving Functions

When compared with a machine which has been used for 15 years or longer and is about to reach its replacement time, a CELOS-equipped model with faster mechanisms and the energy-saving functions can cut down the annual energy consumption by 45%.^{*3}

This is equivalent to a reduction of approximately 2,650 kg^{*4} of CO₂ emissions per year, contributing to the prevention of global warming.

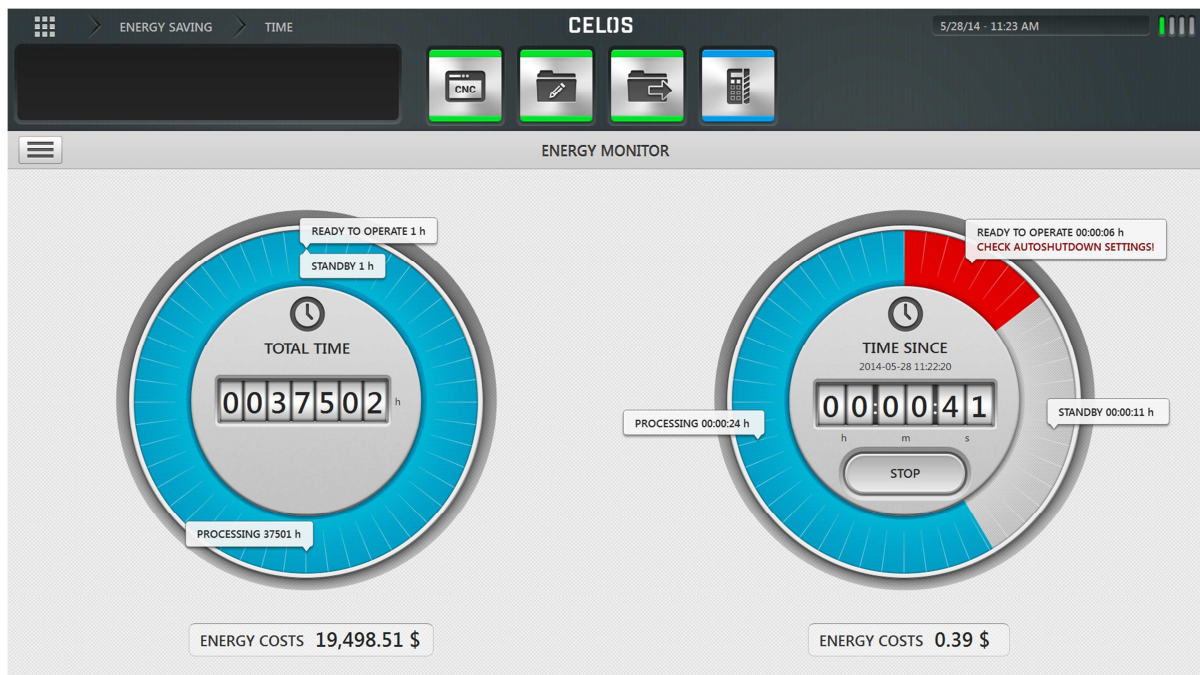
^{*3} Comparison between the latest DMG MORI lathe "NLX2500MC" and "SL-250BMC" manufactured in 1997

^{*4} Calculated using the values of Chubu Electric Power Co., Inc. on "The 2012 Emission Factor List by Business"

- The figures mentioned above may not be obtained due to differences in cutting conditions or environmental conditions during measurement.

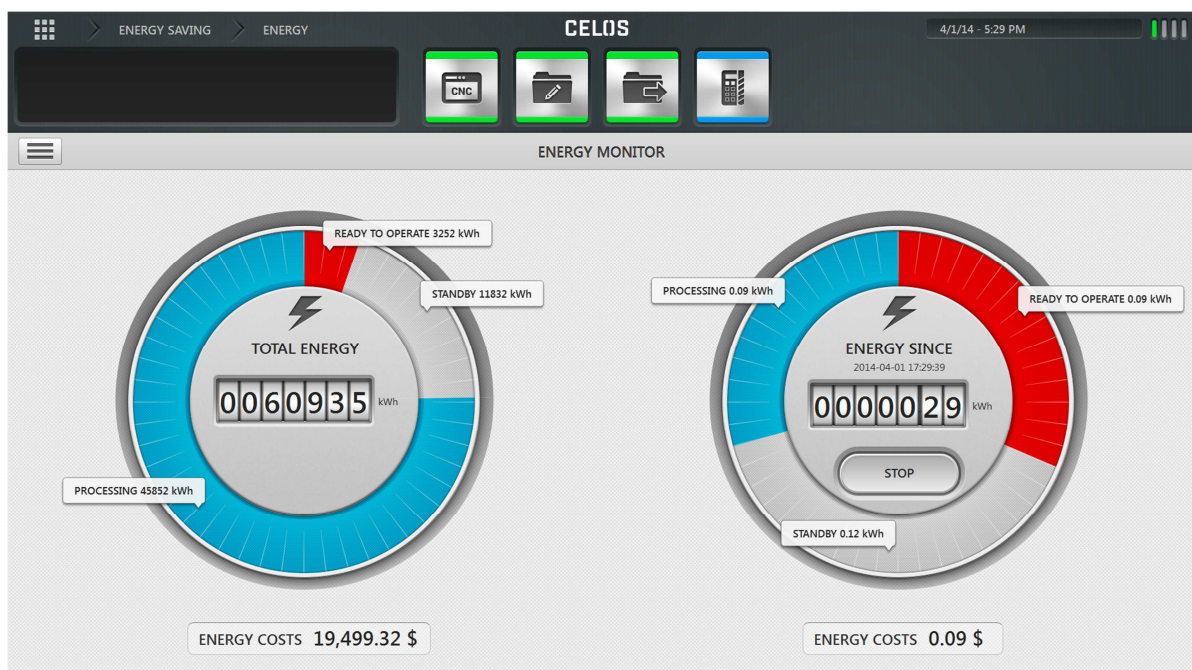
DMG MORI SEIKI will continue to work on research and development to provide products that are reliable, highly functional and worthy of investment to meet each and every customer's needs.

Power Consumption Monitoring on CELOS Screen



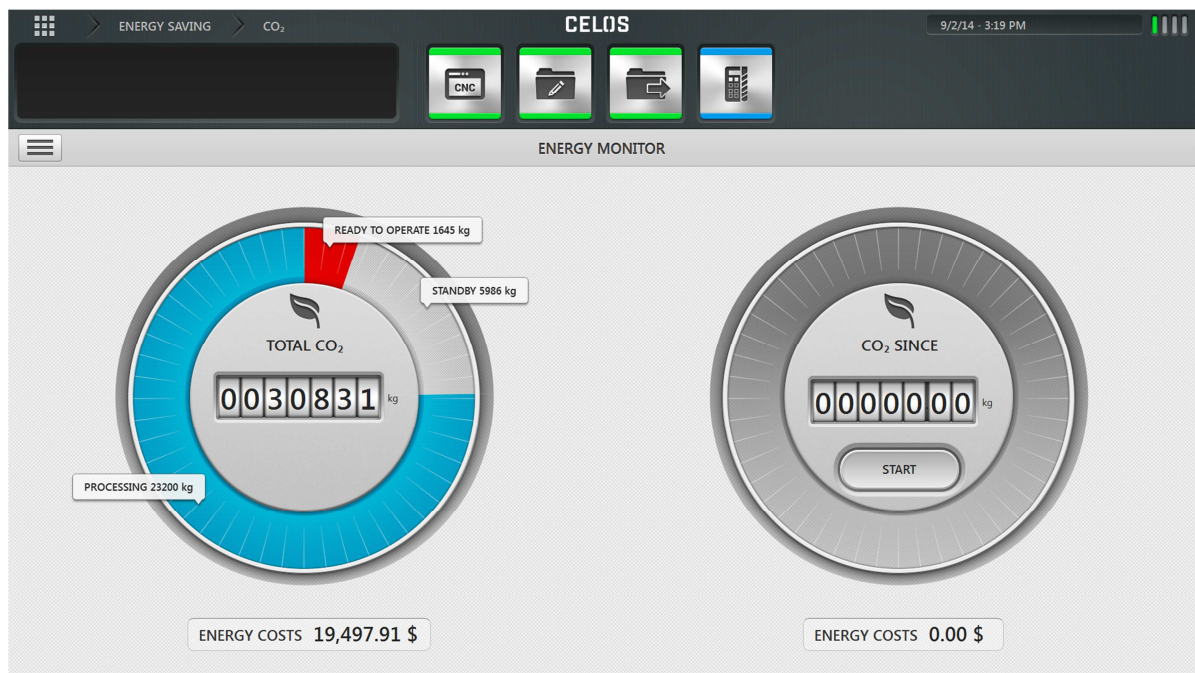
Efficiency monitoring

The total time of each machine state (Standby, Ready to operate and Processing) can be shown in a pie chart.



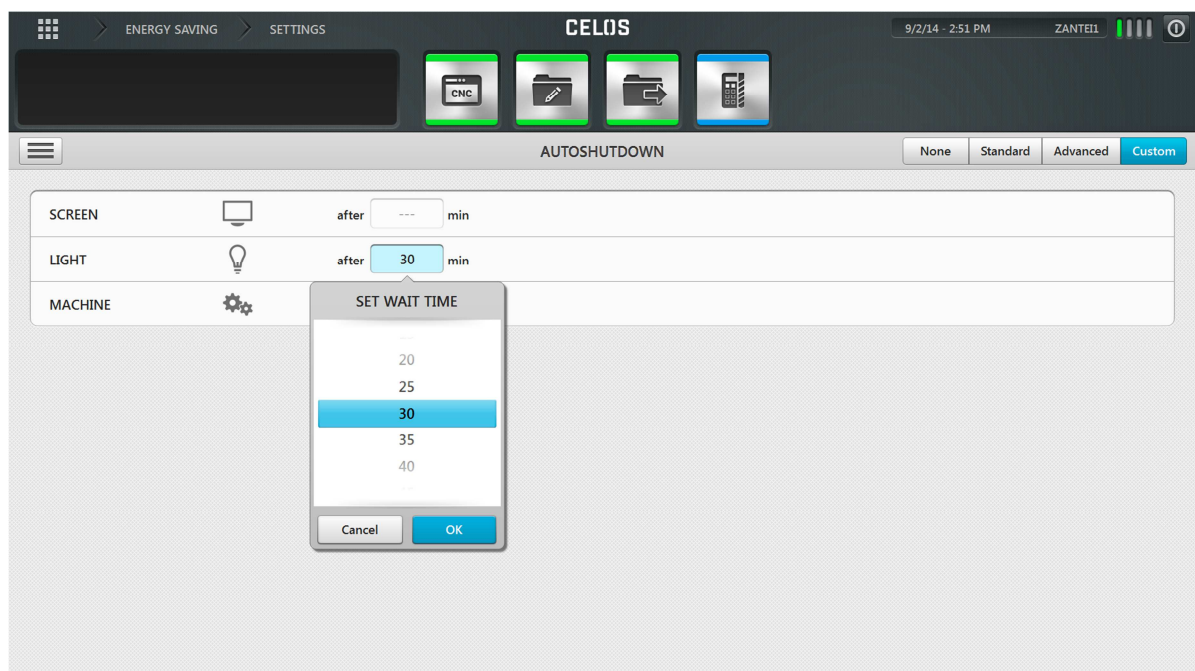
Energy monitoring

The display can be switched to the power consumption information display.



CO₂ monitoring

The display can be switched to the CO₂ emission information display.



AUTO shutdown

On this screen, the user can set the turn-on/off time of the screen, machine light and machine power.