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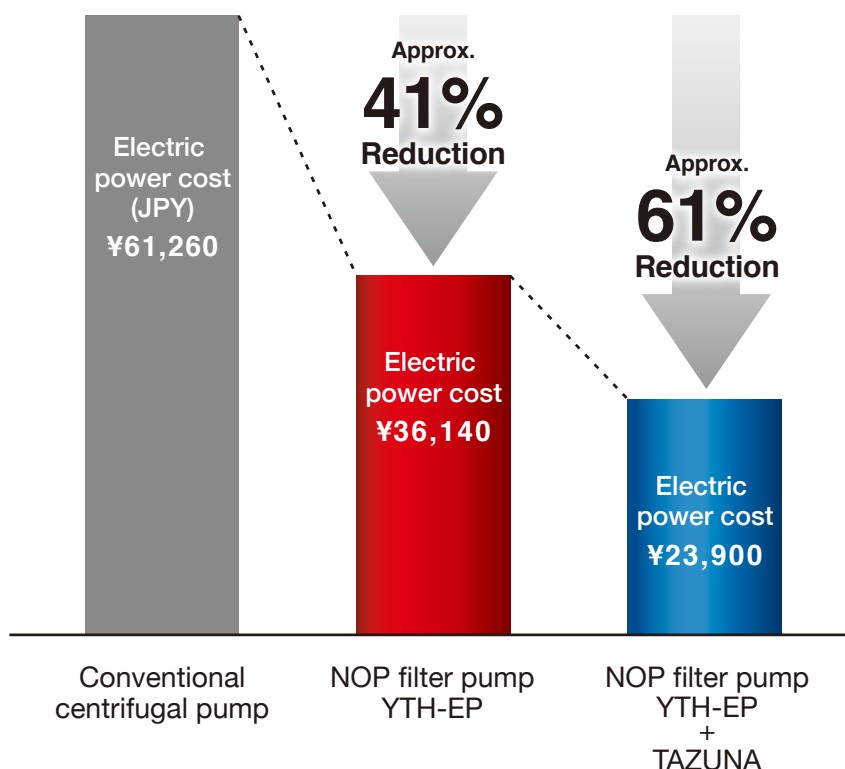
Система контроля жидкости TAZUNA

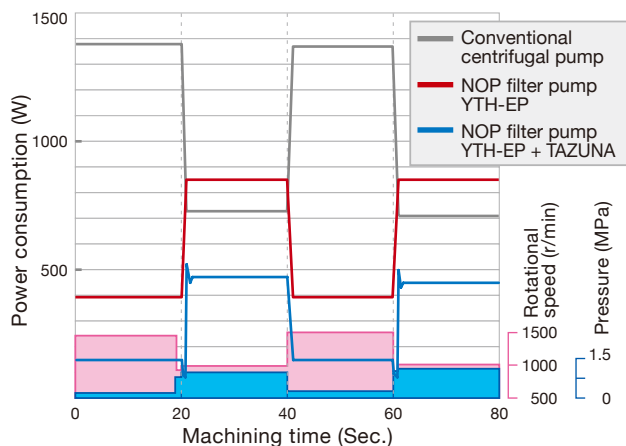
A Fluid Control System That Reduces Annual Electric Power Cost by Up to 61 %

Just the use of NOP filter pump by itself cuts the annual electric power cost by about 41%. Additional savings of about 20% would be achieved, or a total of 61%, through the use of the TAZUNA™ fluid control system.

Trimming the production costs is a way to improve your competitiveness. The saving impact will be greater in a plant with a multiple of machining center operating. Reduction in power consumption enables trimming of CO² and is an effective measure against global warming.

Comparison of Annual Electric Power Bills



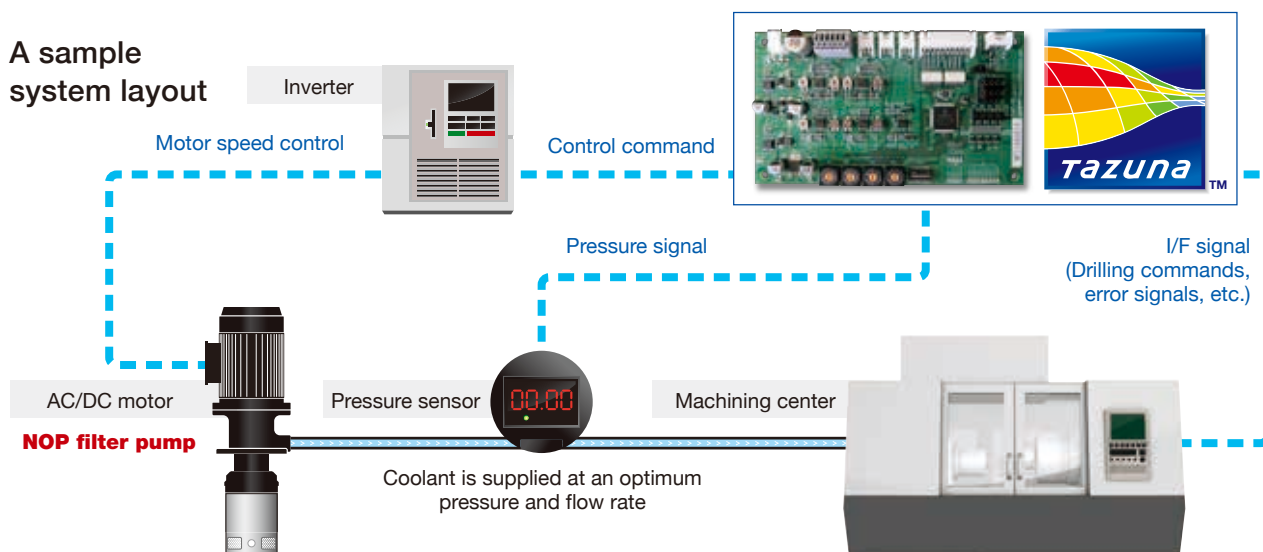


- Operating cycle: total 80 seconds cycle
 Unload (0 MPa) 20 sec.
 → Through-coolant (1.1 MPa) 20 sec.
 → Unload (0 MPa) 20 sec.
 → Through-coolant (1.1 MPa) 20 sec.
- The energy-saving effect will vary due to the difference in machining pressures and drill diameters.
- The calculation is based on operation 8 hours/day, 365 days/year, and the electric power billed at ¥20/kWh.

TAZUNA™ Fluid Control System (Software)

TAZUNA™ is an automatic fluid control system (software) developed by NOP. The system uses a pressure sensor to identify the drill diameter being used by the machining center. It continuously controls the NOP filter pump, adjusting the pressure and flow rate instantaneously according to the drill movement. The absence of unneeded pressure means no extra pressure is wasted through the relief valve. The power consumption is greatly reduced while maintaining machining accuracy.

A sample system layout



Features of TAZUNA™

• Additional savings in energy

TAZUNA™ adjusts the motor within the NOP filter pump to an optimum speed for the drill diameter in use, so that significant energy savings and CO² reduction can be achieved.

• Improving machining accuracy

The system is compatible with any drill diameter. Automatic control of the pressure to an optimal value stabilizes the machining accuracy.

• No initial settings required

As an automatic drill identification system is pre-installed, the system is ready to use. No initial setting and other cumbersome programming (for different drills) are required on the machining end.

• Warning function

Intelligent System alarms user in advance of upcoming performance deterioration of the pump, so that corrective action can be taken and production-loss can be reduced.

• Constant pressure control

Regardless of drill hole diameters or numbers, coolant is automatically supplied at constant pressure by fixed pressure setting.

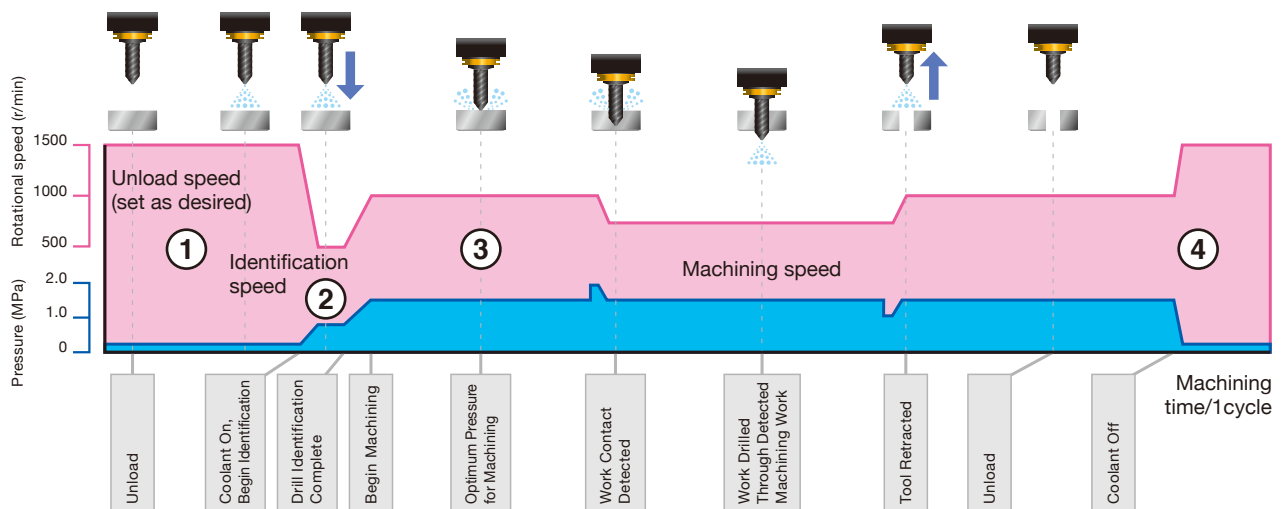
• Compact and low cost

The circuit board is a compact and low-cost single card, complete with required interface.

Automatic Drill Identification System

A Flowchart for the Automatic Drill Identification System

- ① In the unload status (While machining is stopped), the system runs at the designated speed in the chip removal mode.
- ② Following a coolant on input, the speed changes to the drill-identification speed, and identifies the drill hole diameter.
- ③ The system controls the rotational speed so as to give an optimum machining pressure and flow rate for the drill-hole diameter as identified. (The system continuously controls the rotational speed to give an optimum machining pressure and flow rate during the machining of work.)
- ④ On completion of the drilling, the system returns to the unload status.



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