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Panasonic Commercializes "Thermoelectric Cooling Roller" Equipped with Thermoelectric Devices



"Thermoelectric Cooling Roller" Equipped with Thermoelectric Devices

(June 2016, Panasonic)

Panasonic commercialized "Thermoelectric Cooling Roller" equipped with thermoelectric devices contributing to space-saving, maintenance-saving for cooling systems of commercial use printers.

Osaka, Japan - Panasonic Corporation announced today that it has developed [Thermoelectric Cooling Roller\[1\]](#) equipped with [thermoelectric devices\[2\]](#) and the mass production commences in July 2016. Without using any water, the industry first*1 thermoelectric cooling roller does not need arranged pipes to circulate water, making [cooling system\[3\]](#) itself compact. The thermoelectric system also reduces time and cost on maintenances, for the periodical water exchange and cleaning are not necessary.

For two-sided printing with commercial use printers, after printing on one side of the sheet, the water cooling type roller is generally used for cooling the heated dry paper in order to continue back printing. For water cooling system, spaces are necessary for waste water disposal as periodical water exchange and for arranged pipes, and moreover the water leakage may happen. By using the new roller built in with thermoelectric elements of increased density per unit area, the excellent cooling capability and quick thermal response are achieved, and hence the thermoelectric cooling roller without using any water is commercialized.

Besides commercial use printers, the product can be used for temperature-controlled conveyance devices which need temperature control process by rollers, machines tools, as well as food processing machines, rubber processing machines, and medical related machines such as high precision temperature-controlled units etc.

This new product has the following features:

1. Industry first*1 thermoelectric device cooling roller without using any water.
This technology has made compact cooling system and solved the limitation of space for commercial printing machine.
- Installation space: reduction by around 40% (No need of [cooling chiller\[4\]](#) and arranged pipes for water cooling system)

2. No need for periodical exchange of water and cleaning for roller, contributing to significant reduction of maintenance time and cost.
 - Maintenance time: around 30 minutes (several days for water cooling type²)
3. Significant reduction of start-up and shut-down time for cooling by quick response with thermoelectric devices
 - Cooling time is reduced to 1/6.
(water cooling type: around 30 minutes → This product: around 5 minutes)

Notes:

- 1: As a thermoelectric roller for commercial use printers as of June 24, 2016 (Panasonic data)
- 2: The cooling type generally adopted for commercial use printers currently.

[Term Descriptions]

[1] Thermoelectric Cooling Roller

The roller, equipped with several pieces of thermoelectric devices inside, is able to move the heat outside the roller to the inside for cooling the roller surface.

[2] Thermoelectric device

As thermoelectric elements, P type and N type have opposing characteristics which are arranged at positions alternately. When the electric current is applied on the device, the heat of one side moves to the opposite side, thus one side gets cold and the opposite side gets hot.

[3] Cooling system

The cooling devices used for cooling the heated dry paper after printing one side as two-sided printing, in order to continue back printing.

[4] Cooling chiller

The water cooling device circulates water as a medium for cooling.

About Panasonic

Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the consumer electronics, housing, automotive, enterprise solutions and device industries. Since its founding in 1918, the company has expanded globally and now operates 474 subsidiaries and 94 associated companies worldwide, recording consolidated net sales of 7.553 trillion yen for the year ended March 31, 2016.

Committed to pursuing new value through innovation across divisional lines, the company uses its technologies to create a better life and a better world for its customers. To learn more about Panasonic:

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