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Mitsubishi Electric's Electroplating Machine Receives 2019 R&D 100 Award

Contributes to improved productivity and reduced environmental impact

TOKYO, December 10, 2019 – [Mitsubishi Electric Corporation](http://www.MitsubishiElectric.com) (TOKYO: 6503) announced today that it has received an R&D 100 Award for an innovative one-piece-flow automatic-sliding plating machine that enables plating plants to achieve improved productivity and reduced environmental load. The award was received during the R&D 100 Awards ceremony, which took place in San Francisco, USA on December 5. To date, Mitsubishi Electric has received 26 R&D 100 Awards from R&D World.

Electroplating is a process that puts the target item into contact with a plating solution via an electrode, without requiring a plating bath, enabling just the contact surface to be plated while sliding by the electrode.



R&D 100 Awards ceremony participants



One-piece-flow automatic-sliding plating machine

Features of Award-winning Technology and Equipment

1) Deploys high-speed plating technology for improved productivity

- Liquid resistance is reduced by greatly shortening the distance between electrodes during plating.
- Reduced liquid resistance enables use of high current for faster film formation.
- High-speed film formation shortens process time for continuous one-piece-flow plating without reducing processing volume, realized improved automation with a downsized machine.
- Compared with conventional batch-processing method for high-volume plating, processing time per unit is reduced to about one-fifth and productivity is greatly reduced to just 45 seconds per piece, compared to 215 seconds using conventional plating processes at certain Mitsubishi Electric factories.

2) ***Reduces environmental load through high-efficiency, high-quality sliding plating technology***

- Highly efficient sliding plating technology reduces plating solution to one-tenth that of current process and low-loss solution-circulation system greatly reduces amount of wasted solution.
- Optimizes amount of plating solution by accurately controlling both solution supplied to electrode and spreading speed, and by improving plating film quality.

Background of Equipment Development and Award-winning Technology

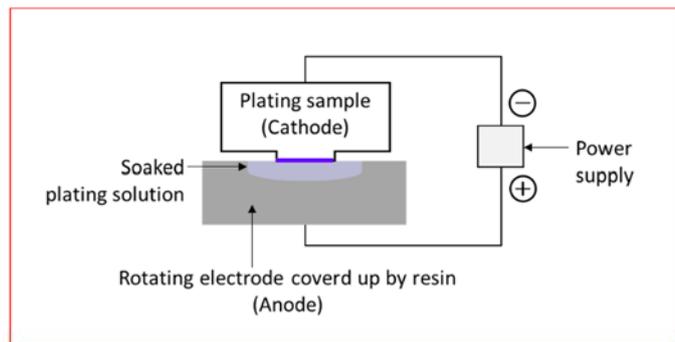
In recent years, demands have been rising for the plating of products and parts with rare metals to improve their corrosion resistance, conductivity and mountability. In parallel, efforts have been sought to realize more efficient plating by coating only the target surfaces due to the short service lives of rare metals. Also, while the throughput of plating solutions has been increasing, measures have been sought to reduce the use of chemical substances and thereby low environmental loads.

Mitsubishi Electric's new electroplating process increases plating speed by reducing the liquid resistance between electrodes. Furthermore, the process reduces the amount of plating solution required through enhanced efficiency and by reducing the use of solution that does not contribute to film formation.

Going forward, Mitsubishi Electric aims to continue developing increasingly environmentally friendly processing knowhow such as the technology awarded this time.

About R&D 100 Awards

R&D World has presented its prestigious award to 100 world-class technologies selected every year since 1963. Professional consultants, university officials, industry researchers and other experts openly propose their technologies from the viewpoint of technical importance, originality and usefulness. Winners are selected from among products put into practical use in the previous year.



One-piece-flow automatic-sliding plating machine

Patents

Pending patents for the technology announced in this news release number one in Japan and one each in five other countries.

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About Mitsubishi Electric Corporation

With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded a revenue of 4,519.9 billion yen (US\$ 40.7 billion*) in the fiscal year ended March 31, 2019. For more information visit:

www.MitsubishiElectric.com

*At an exchange rate of 111 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2019