NEWS RELEASE

July 9th, 2026

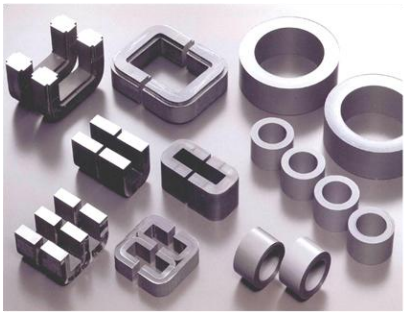
NIPPON KINZOKU CO., LTD.

NIPPON KINZOKU Accelerates Global Sales of Ultra-Thin Electrical Steel Strips "GT Series" and "ST Series" as "Fine Eco Metal" Environmentally Friendly Products

- Delivering the ultimate balance of “Ultra-Thinness” and “Low Core Loss” to drastically reduce high-frequency energy loss -

NIPPON KINZOKU CO., LTD. (Headquarters: Minato-ku, Tokyo; President: Yasushi Shimokawa; TOKYO: 5491; "the Company") and its subsidiary, NIKKIN DENJI KOGYO CO., LTD. (Headquarters: Kawaguchi, Saitama; President: Akira Nishimura), are launching a strategic sales initiative for their ultra-thin Grain-Oriented (GT Series) and Non-Oriented (ST Series) electrical steel strips under the brand name "Fine Eco Metal".
"Fine Eco Metal" is a brand name for the Company's proprietary "Eco-Product" series, certified based on our own environmental standards.

Ultra-thin electromagnetic steel strip



Wound iron cores

High-frequency reactors

Figure 1: Product Examples

Background and Objectives: Addressing the "Shift to Electrification"

Amid the global movement toward a decarbonized society, there is an increasing demand for the electrification and higher efficiency of equipment. This has intensified the need to minimize energy loss (core loss), particularly in high-frequency ranges.

Leveraging years of proprietary rolling and advanced heat treatment technologies, the Company and NIKKIN DENJI KOGYO have successfully achieved both "unmatched thinness" and "superior magnetic properties" -a combination typically difficult to reach with conventional electrical steel. By positioning these products as "Fine Eco Metal," we aim to accelerate our solutions for customers developing next-generation technologies.

Benefits of Adopting Ultra-Thin Electrical Steel Strips

By reducing the thickness of the electrical steel strip, eddy current loss (core loss) can be significantly lowered. Adopting our ultra-thin strips provides the following advantages:

Item	Description	Benefits
Energy Saving	Substantially reduces core loss by suppressing eddy currents.	Improved fuel/electricity efficiency and better heat management.
High-Frequency Support	Enables high-speed rotation and high-output drive.	Ideal for high-speed motors and high-frequency transformers.
Compact & Lightweight	Allows for high power density designs.	Reduces installation space and overall product weight.

**Eddy currents are electrical currents generated within the electrical steel strip by alternating magnetic fields; they are a primary factor that increases core loss.*

<Low Loss Effect through Thinning>

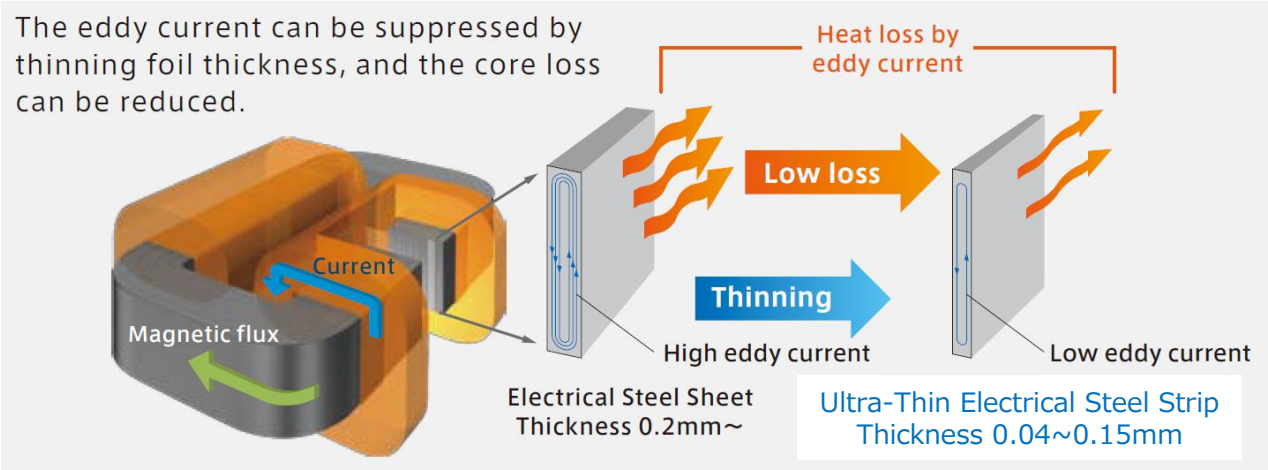


Figure 2: Features and Benefits of Ultra-Thin Electrical Steel Strip

Product Lineup

1) Ultra-Thin Grain-Oriented Electrical Steel Strips: "GT Series"

By aligning the crystal grain orientation in a specific direction, this series delivers exceptionally high magnetic properties in that direction. Being significantly thinner (0.04mm to 0.10mm) than conventional grain-oriented strips, it dramatically reduces eddy current loss in high-frequency environments.

Thickness: 0.04mm (GT040), 0.05mm (GT050), 0.08mm (GT080), 0.10mm (GT100)
(Please consult us for other thickness requirements)
Width: 5mm to 305mm

Applications: High-frequency transformers, reactors, pulse power supplies, magnetic shielding, etc.

Grade	Thickness (mm)	Core loss (W/kg) *1				Magnetic flux density (T) (B_8) *2
		$W_{15/400}$	$W_{10/1000}$	$W_{2/5000}$	$W_{1/10000}$	
GT040	0.04	17.9	20.3	10.3	8.3	1.61
GT050	0.05	13.0	17.0	10.2	7.1	1.75
GT080	0.08	13.2	17.5	11.1	9.6	1.80
GT100	0.10	12.5	21.3	15.2	10.4	1.82

***1 $W_{15/400}$: Core loss in 1.5(T)/400(Hz) *2 B_8: Magnetic flux density at Magnetizing force 800(A/m)**

Table 1: Examples of Magnetic Properties of the GT Series

2) Ultra-Thin Non-Oriented Electrical Steel Strips: "ST Series"

This series exhibits nearly uniform magnetic properties in all directions. It significantly suppresses eddy current loss within motors and demonstrates excellent low-loss characteristics across the high-frequency range of 400Hz to 20,000Hz, contributing significantly to higher efficiency and miniaturization of motor designs.

Thickness: 0.05mm (ST050), 0.08mm (ST080), 0.10mm (ST100), 0.15mm (ST150)
(Please consult us for other thickness requirements)
Width: 5mm to 300mm

Applications: High-speed motors for drones, electric compressor motors, high-speed medical motors, cryogenic motors, etc.

Grade	Thickness (mm)	Core loss (W/kg) *1				Magnetic flux density (T) (B_{50}) *2
		$W_{10/400}$	$W_{10/1000}$	$W_{2/5000}$	$W_{1/10000}$	
ST050	0.05	13.2	35.9	14.0	7.2	1.62
ST080	0.08	9.9	29.9	14.3	10.3	1.66
ST100	0.10	10.1	31.8	16.3	12.0	1.68
ST150	0.15	10.7	36.5	19.9	16.2	1.68

***1 $W_{10/400}$: Core loss in 1.0(T)/400(Hz) *2 B_{50}: Magnetic flux density at Magnetizing force 5000(A/m)**

Table 2: Examples of Magnetic Properties of the ST Series

Future Outlook: Contributing to Sustainable Manufacturing

The Company certifies products that deliver significant energy-saving effects as "Fine Eco Metal." Through the expansion of these products, we aim to empower innovative development in high-efficiency motors, next-generation power electronics, and high-frequency transformers.
Furthermore, the Company is committed to achieving net-zero CO_2 emissions by 2050 and will continue to contribute to a sustainable society by providing advanced, environmentally friendly materials.

About NIKKIN DENJI KOGYO

Leveraging proprietary rolling technology, NIKKIN DENJI KOGYO is the only provider in Japan of ultra-thin electrical steel strips with a thickness of less than 0.1mm. With over 50 years of expertise, the Company offers an integrated manufacturing system—from material supply to the production of finished components like reactors—earning high trust from customers worldwide.

Ultra-Thin Electrical Steel Products:
https://www.nipponkinzoku.co.jp/en/corporate-profile/business/new-business-development-sect

NIKKIN DENJI KOGYO CO., LTD. Official Website:
https://nikkindenjikogyo.co.jp/en/

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Contact for Inquiries Regarding This Product and Technical Information
NIPPON KINZOKU CO., LTD.　Production Process & Support Department
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