

NIPPON[®]NRICA

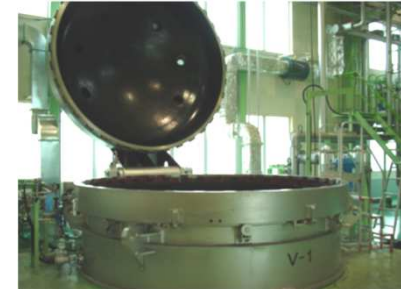
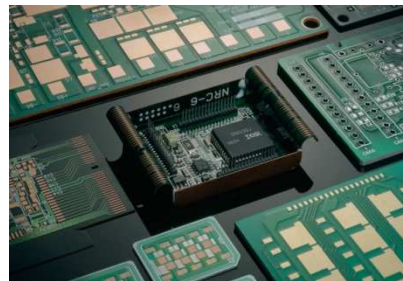
Corporate Profile



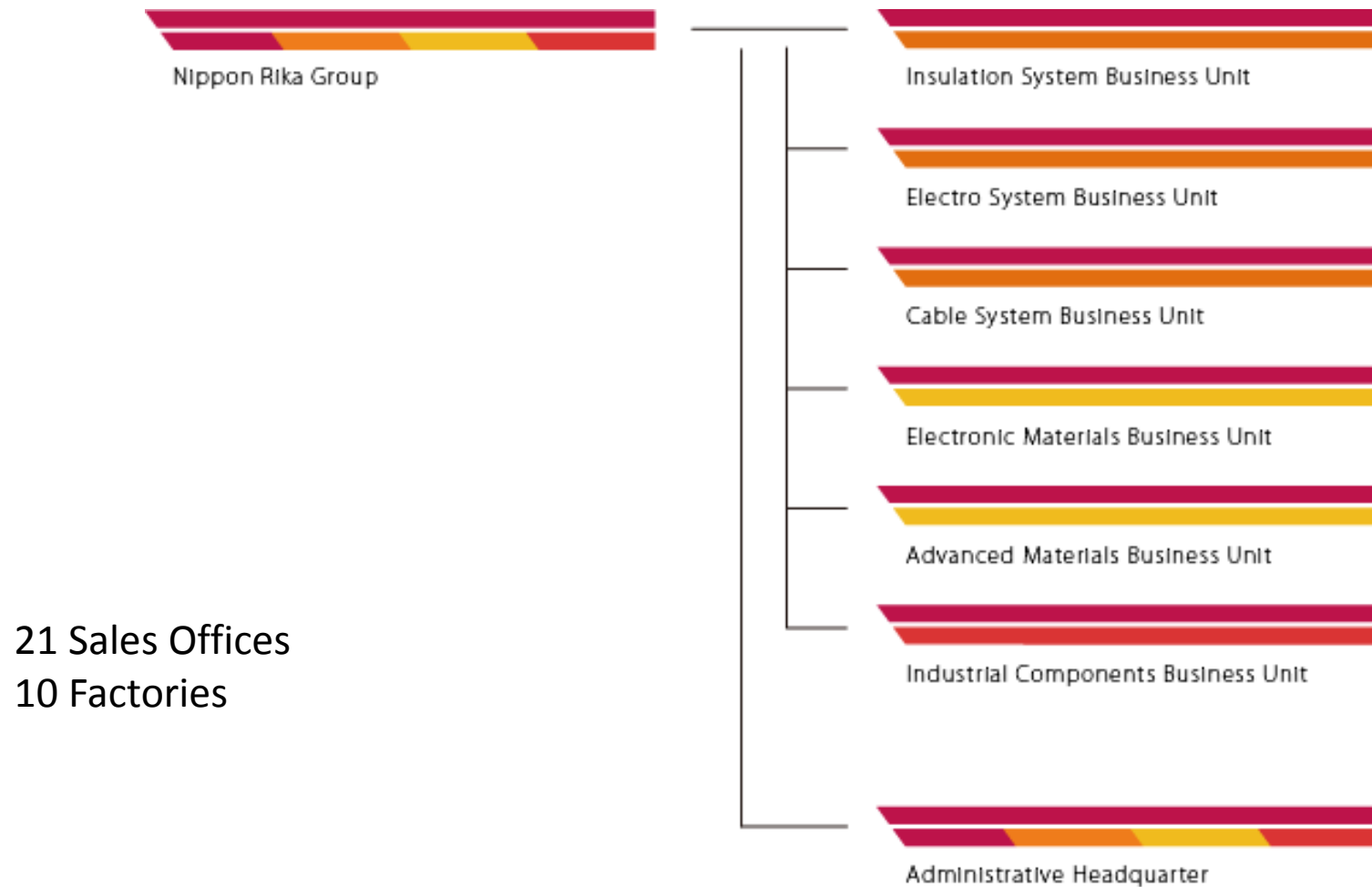
Respecting the people of the world
and the global environment to create new values

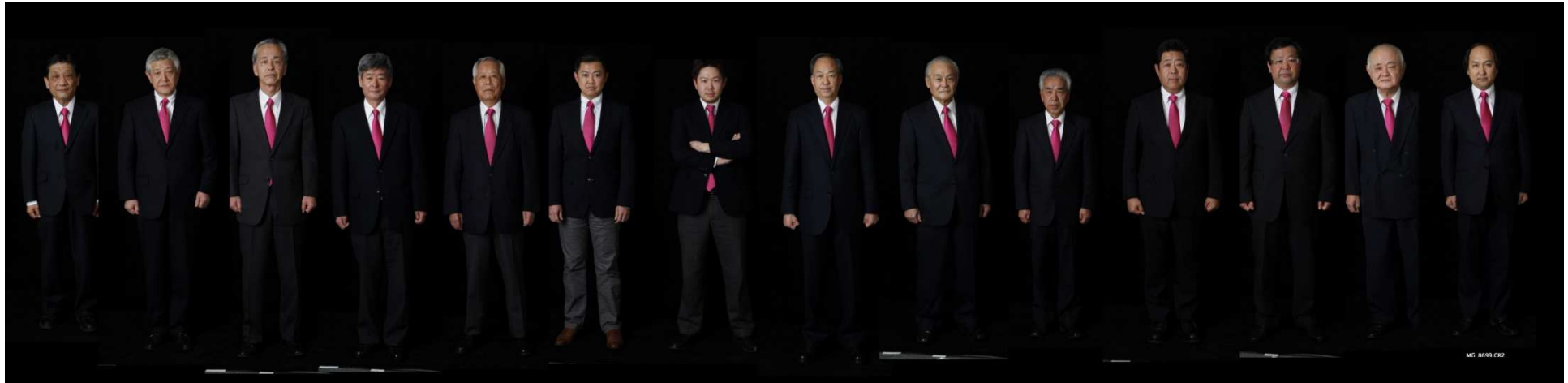
The "NRK" group aims to be a global corporate group that creates new values based on the principle of human respect to contribute to the people of the world and the global environment.

Nippon Rika Kogyosho Co., Ltd
was founded in 1914

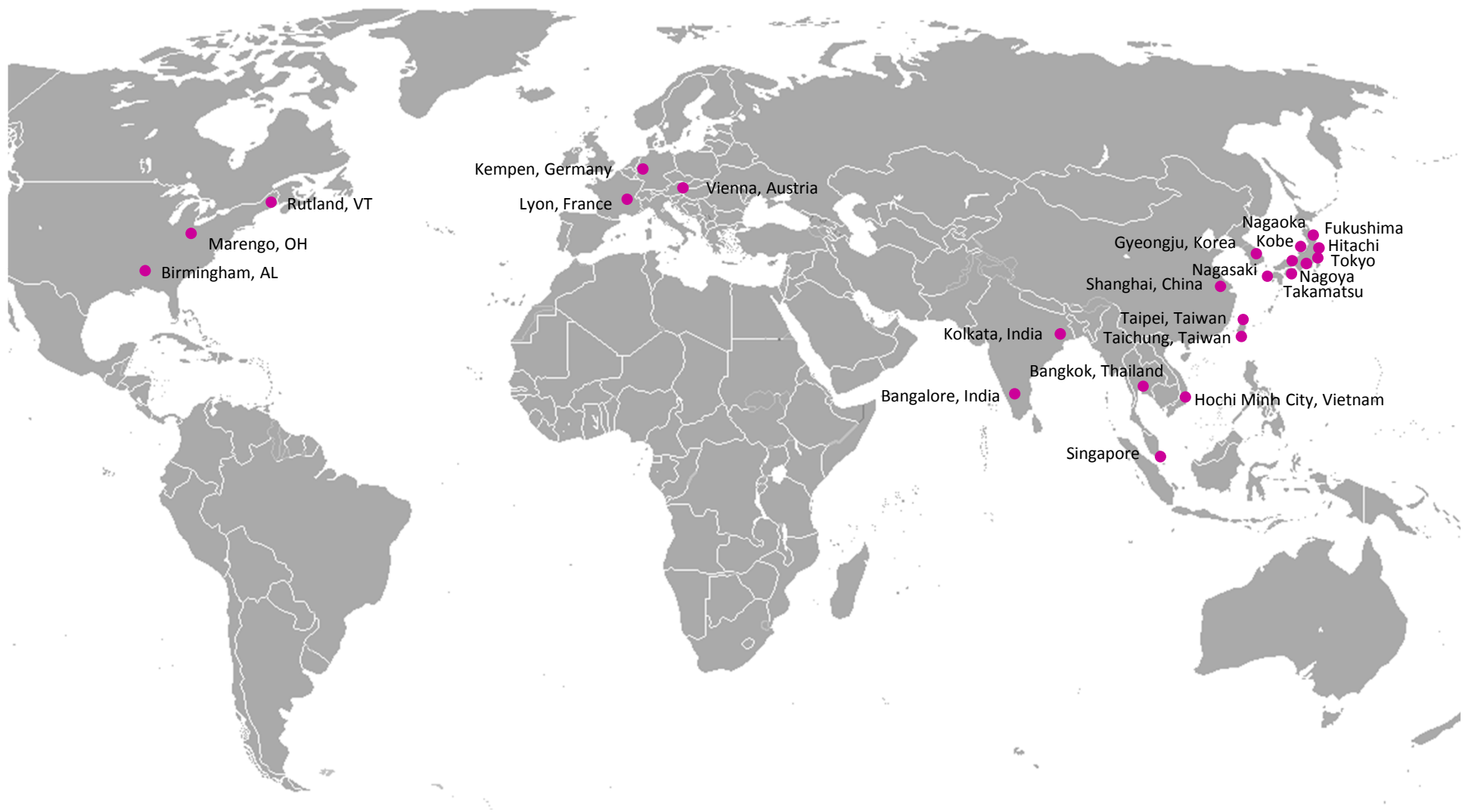


Company Organization

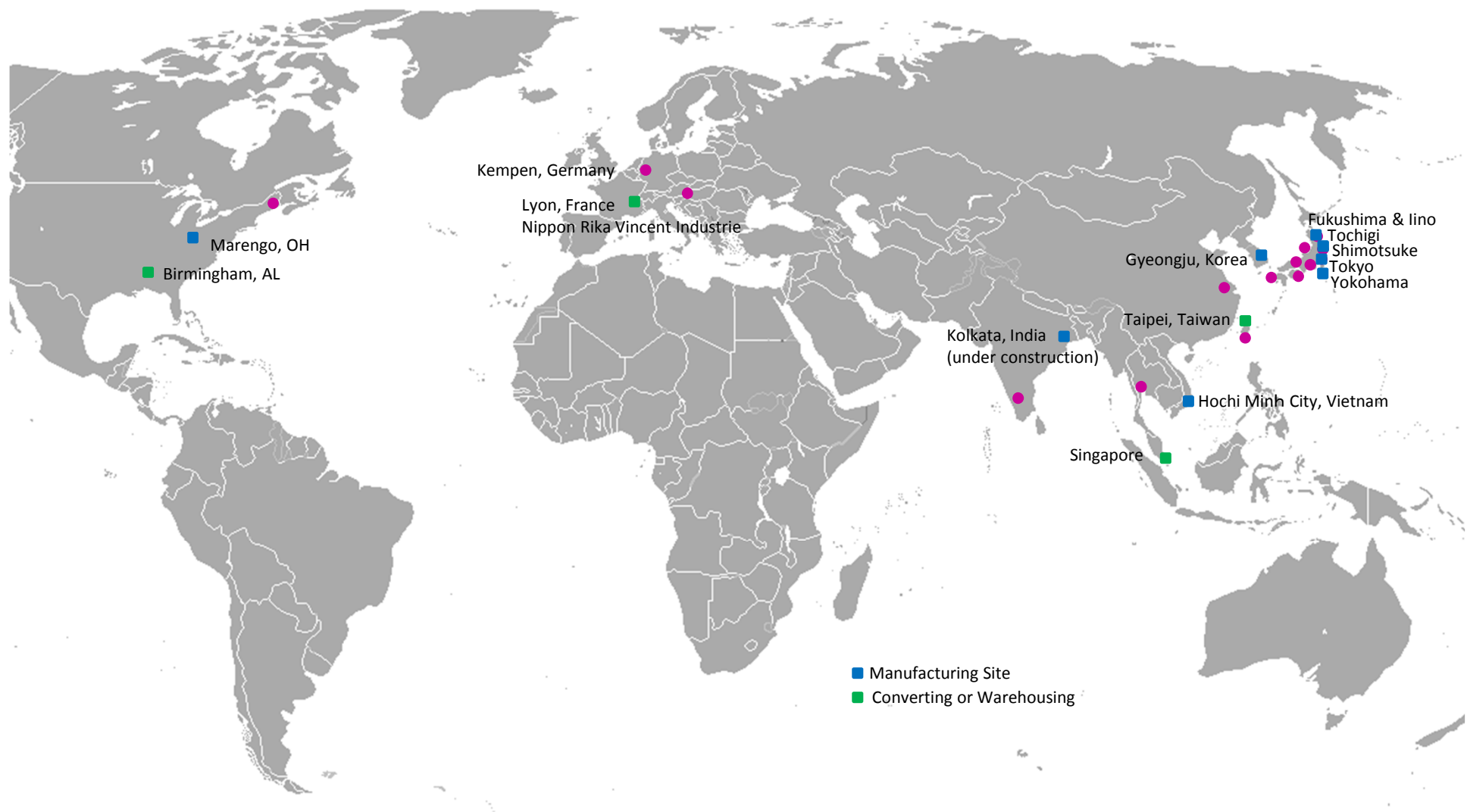




Sales Locations



Factory and Warehouse Locations



Locations

Tokyo Head Office



NIPPONRIKA

Tochigi Works / Shimotsuke Factory

Tochigi Works, Japan

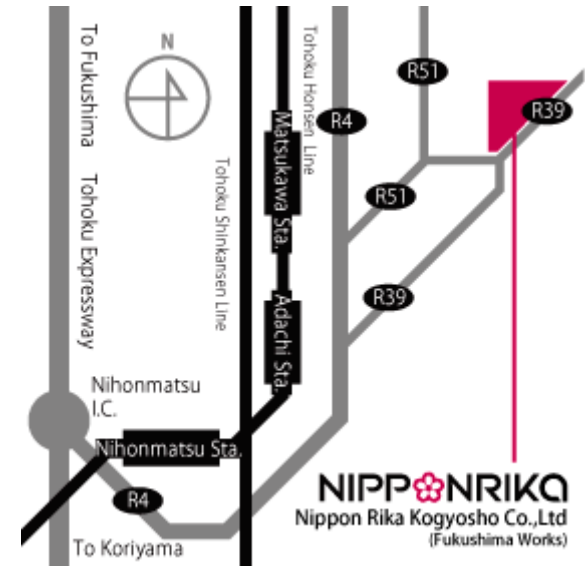


Shimotsuke Factory, Japan

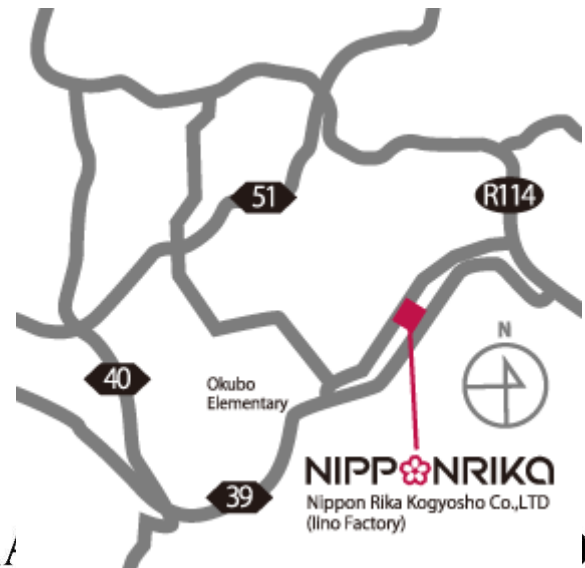


Fukushima Works / Iino Factory

Fukushima Works, Japan



Iino Factory, Japan



Gyeongju Works, South Korea



Ho Chi Minh City Works, Vietnam





Nippon Rika Commutators Inc, Japan



Nippon Rika Electric Wire Co.,Ltd, Japan



NIPPONRIKA



Insulation System
Business Unit

The Finest Mica Paper in the World



KM :Uncalcined Muscovite Paper

RM :Calcined Muscovite Paper

AM : Uncalcined Phlogopite Paper

KMF : Aramid fibril mixed Uncalcined
Muscovite Paper

RMF : Aramid fibril mixed Calcined
Muscovite Paper

AMF : Aramid fibril mixed Uncalcined
Phlogopite Paper

KMP : Polypropylene pulp mixed
Uncalcined Muscovite Paper

RMG : Glass chop mixed Calcined
Muscovite Paper

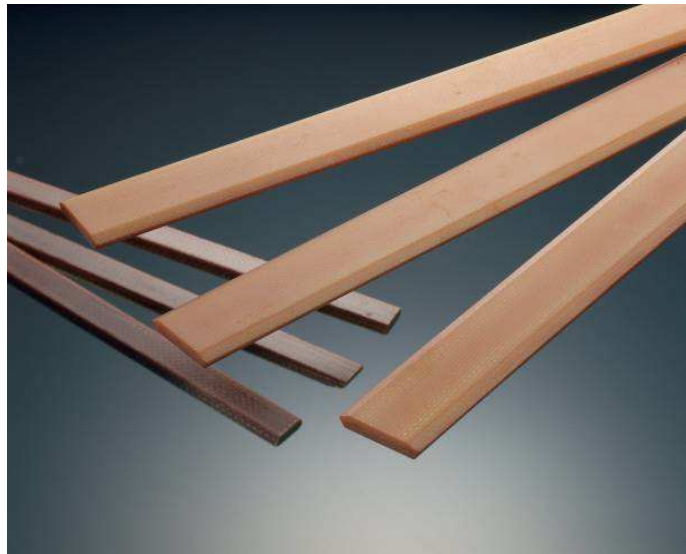
NIPPON RIKA KOGYOSHO CO., LTD.

Mica Products

- Mica Tapes for High Voltage Rotating Machineries
 - Binder-less Mica Tapes (RikaPolypro™)
 - High Thermally Conductive Mica Tapes (**SHIRO™/KURO™**)
 - Mica Tapes for Flat Coil Winding System (RikaFibrel™)
 - Super Thin Mica Tape (G4 series) / *Twist-Free* Glass Cloth Backing
 - Extremely High Thermal Resistance Mica Tape (RikaCalfib™)
- Mica Tapes for Fire Proof Cable
- Mica Splitting Tape



Mica Products / Glass Products



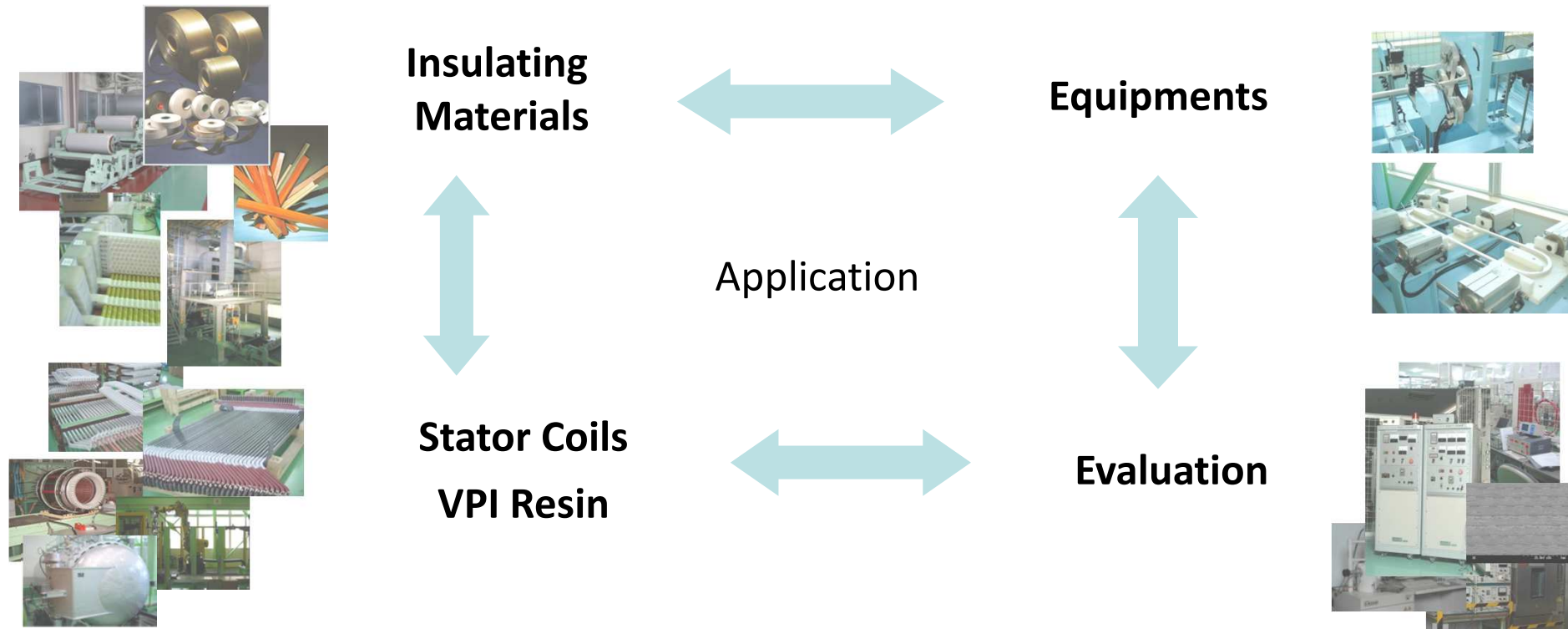
Slot Wedges
(Epoxy / Polyimide)
Mica Splitting Products
Mica Washers
Glass Laminates
(Epoxy / Polyimide)
Mica Tubes
Mica Plates

Glass Tape
Sealing Tape
Adhesive Tape

Rika-FINE™ System

Rika-FINE™ System is insulation system for manufacturing stator coils for high voltage rotating machineries.

Since Rika-FINE™ System controls all the process, Nippon Rika Group can provide the high quality insulation system.



Rika-FINE™ System

Rika-FINE™ System is Anhydrite Epoxy VPI Resin for High Voltage Rotating Machineries, which has been supplying to heavy industry fields for more than 20 years.

Rika-FINE™ VPI Resin contains special capsule accelerator (micro sized / temperature reaction) inside the resin, so that high quality insulation property can be delivered to our clients.

Nippon Rika Electro System Business Unit owns coil shop in house, so we ensure the Rika-FINE™ System quality for Motor and Generator

- Room Temperature (35-40C) VPI
- No Rotating Curing Required
- Less Voids in the Insulation Layer



ex) customer "T" in Korea

Locations

Mica Paper Production – Tochigi Works

Mica Tape Lamination – Tochigi Works / Nippon Rika GR (INDIA) Pvt Ltd.

Mica Splitting Tapes – Tochigi Works



Converting – Tochigi Works / Nippon Rika (S) Pte.,Ltd / Iino Factory
/ Gyeongju Works, Nippon Rika Korea Co.,Ltd



Electro
System
Business Unit

Products

- Stator Coils for Induction Motors (New / Repair)
- Stator Coils for Hydro Generators
- Stator Coils for Turbine Generators
- Specially Shaped Coils
- Commutators



Equipments for Diamond Shaped Coils in Japan

- Conductor Wire Insulation Taping Machine
- Loop Winding Machine
- Pre-consolidation Machines
- Spreading Out Machines
- Auto Taping Machines
- Flat Coil System Taping Machine
- Pre-forming Machine



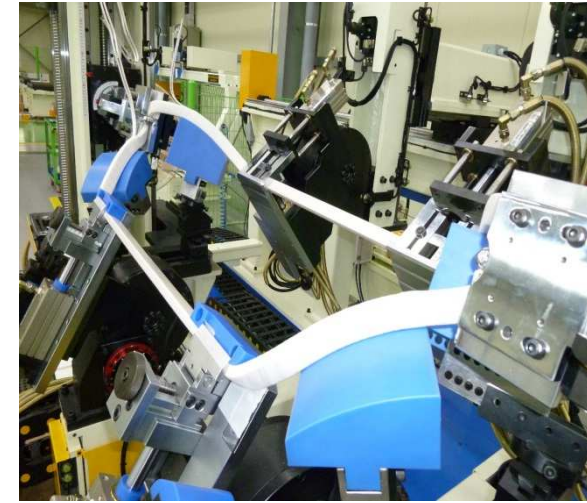
Equipments for Roebel Transposition Coils in Japan

- Conductor Cutting Machine
- Auto Transposition Machine
- Molding Machine
- Forming Machines
- Robot Taping Machine



Equipments for Diamond Shaped Coils in Korea

- Loop Winding Machine
- Pre-consolidation Machines
- Spreading Out Machines
- Auto Taping Machines
- Flat Coil System Taping Machine
- Pre-forming Machine



Equipments for LV Motor Assembling in Vietnam

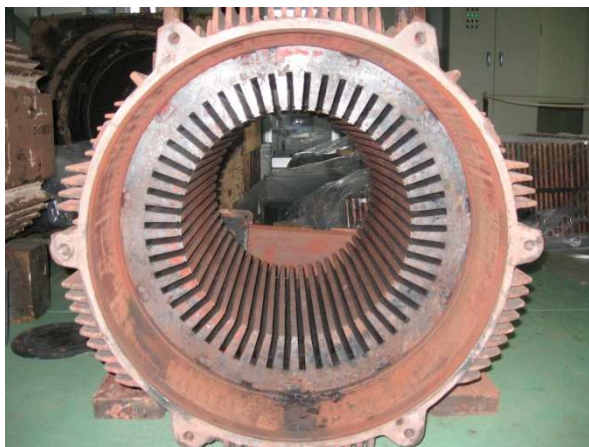
- Winding Coils
- Inserting Coils



NIPPON RIKA KOGYOSHO CO., LTD.

Equipments for Core Cleaning and Rewinding in Japan

- Core Loop Test
- Baking Oven
- Sand Blasting Room
- Coil Removal Section



NIPPO

., LTD.

Vacuum Pressure Impregnation Tank & Curing Oven

- Vertical VPI Tank: 3500 Φ × 3500mm
- Horizontal VPI Tank: 2400 Φ × 6000mm



- Curing Oven: 4000 × 5000 × 4000mm



NIPPON RIKA KOGYOSHO CO., LTD.

Evaluation Equipments

- High Voltage Simulator/Oil Bath (150kV)
- High Voltage Simulator (35kV)
- Transient Surge
- Impulse Surge Tester
- High Voltage Auto Schering Bridge
- Partial Discharge Measuring System
- High Resistance Meter



Commutators

■ Commutators (New / Repair)

Steel (500 ϕ x 350L)



Traction Compressor
(250 ϕ x 35L)



Traction
(310 ϕ x 110L)



Traction
(300 ϕ x 120L)



Industrial
(370 ϕ x 300L)



Locations

Winding Shop – Fukushima Works

– Gyeongju Works, Nippon Rika Korea Co.,Ltd

– Ho Chi Minh Works, Nippon Rika Vietnam Co.,Ltd (LV Motor)

Roebel Bar Winding – Fukushima Works

VPI Tanks – Fukushima Works

Coil Repair Shop – Fukushima Works



Commutators – Toyo Commutator MFG Co., Ltd

NIPPON RIKA KOGYOSHO CO.,LTD.



Electro
Machinery
Business Unit

Bar Table Machine

Applying Scarifying Tapes



NIPPON RIKA KOGYOSHO CO., LTD.

Electrical Heating Press

Pre-consolidation



NIPPON RIKA KOGYOSHO CO., LTD.

TBFM – Turbo Bar Forming Machine

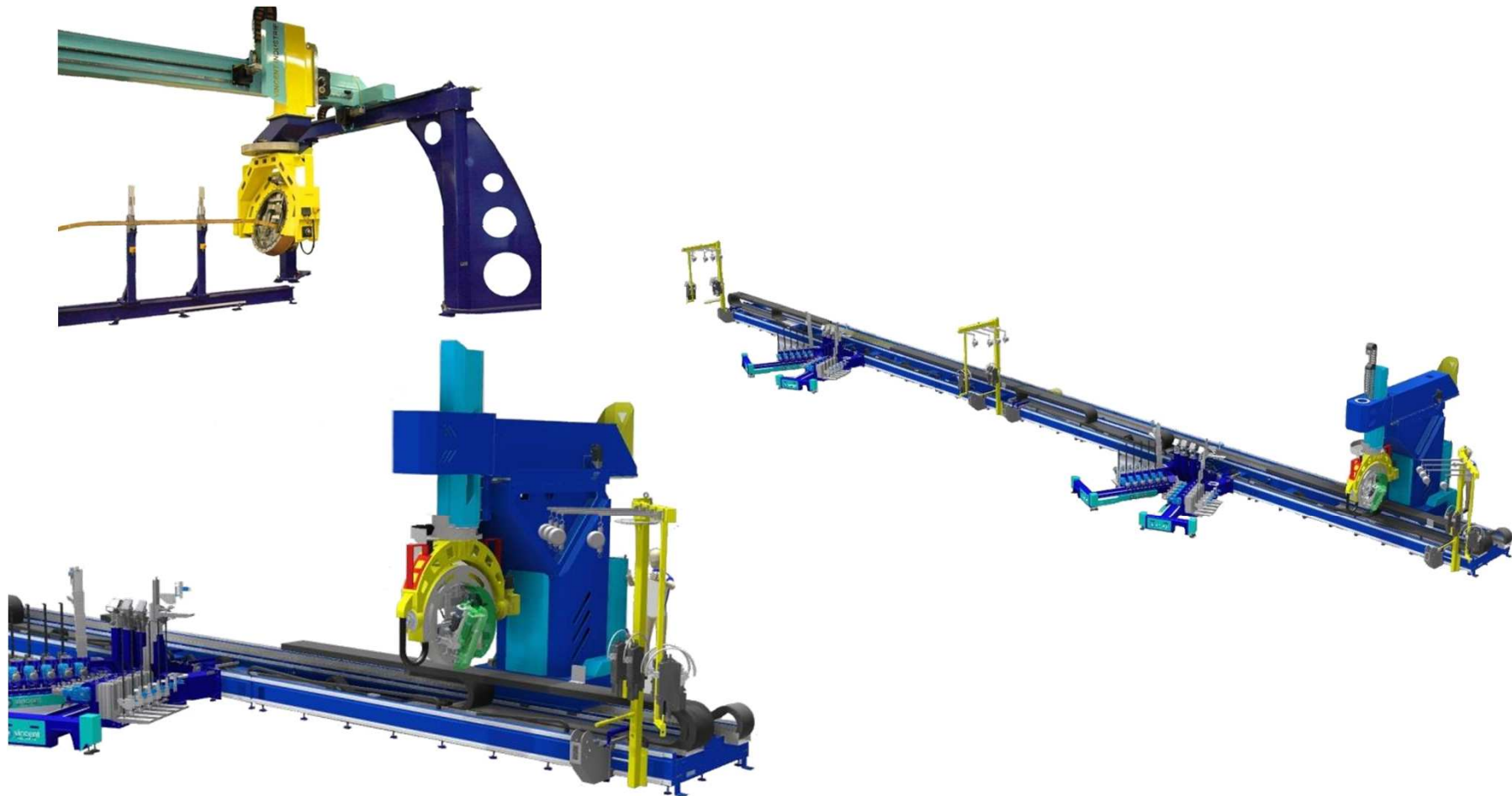
Automatic Bending for Overhang



NIPPON RIKAI KOGYOSHO CO., LTD.

H-TBFM – Hydro/Turbo Bar Forming Machine

Automatic Bending for Overhang



NIPPON RIKA KOGYOSHO CO., LTD.

STM – Scarify Taping Machine

Taping scarifying tape over mold plates



NIPPON RIKA KOGYOSHO CO., LTD.

RBFM – Rotor Bar Forming Machine

Manufacturing formed bars



NIPPON RIKA KOGYOSHO CO., LTD.

LWL – Loop Winding Line

Loop Winding



LWL – Loop Winding Line – Turn Taping Machine

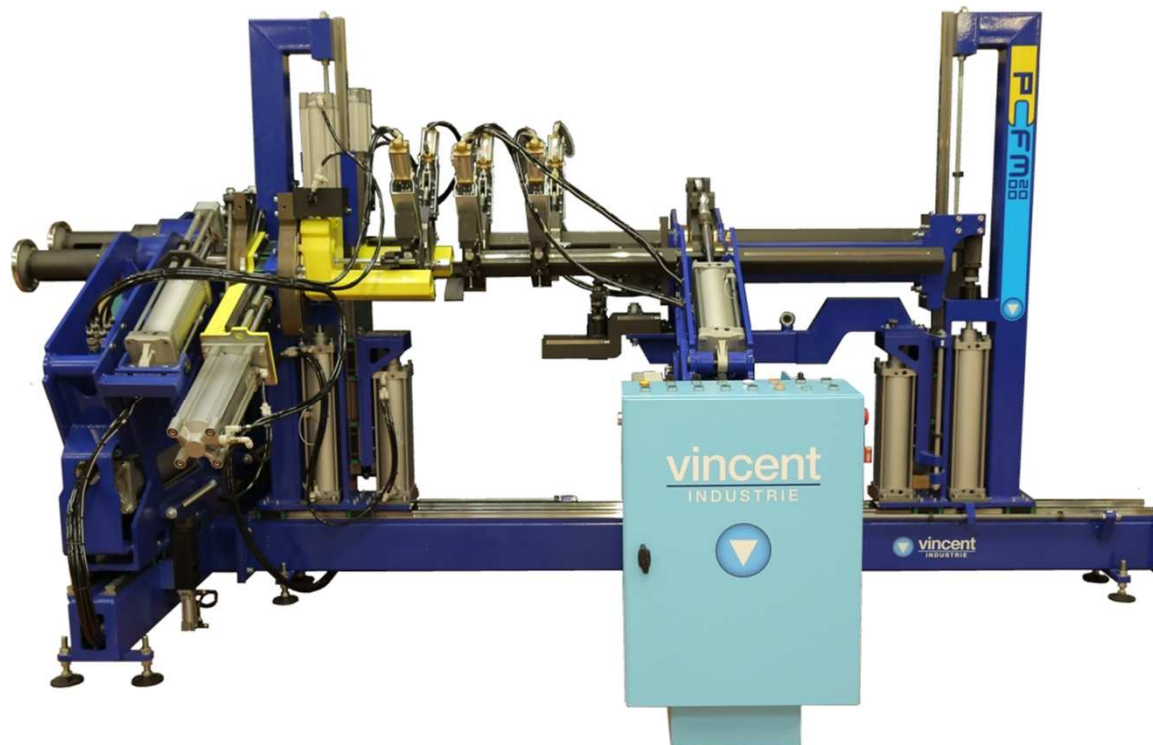
Turn Taping in LWL



NIPPON RIKA KOGYOSHO CO., LTD.

PCFM-G – Pneumatic Coil Forming Machine

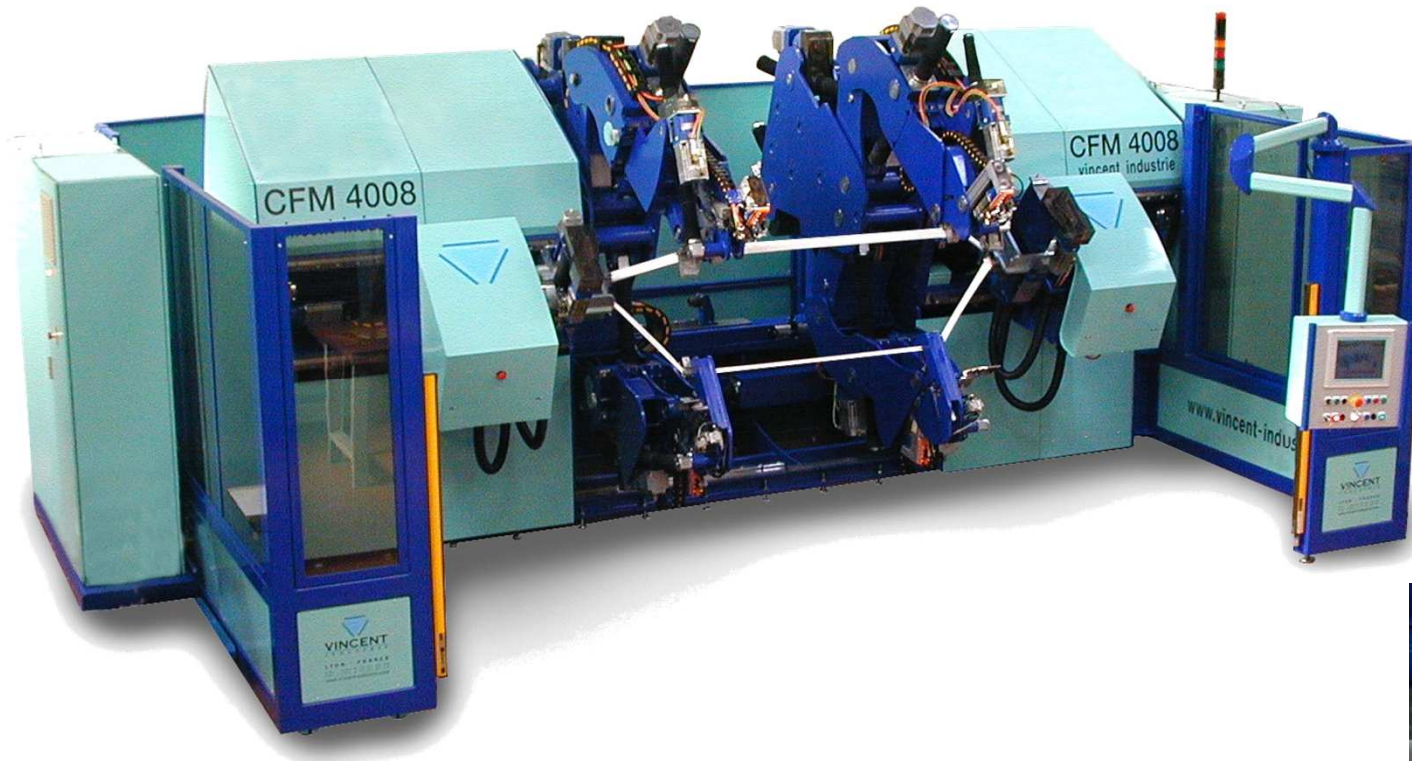
Semi-Automatic Forming Machine for Armature Coils



NIPPON RIKA KOGYOSHO CO., LTD.

CFM 4008 – Coil Forming Machine

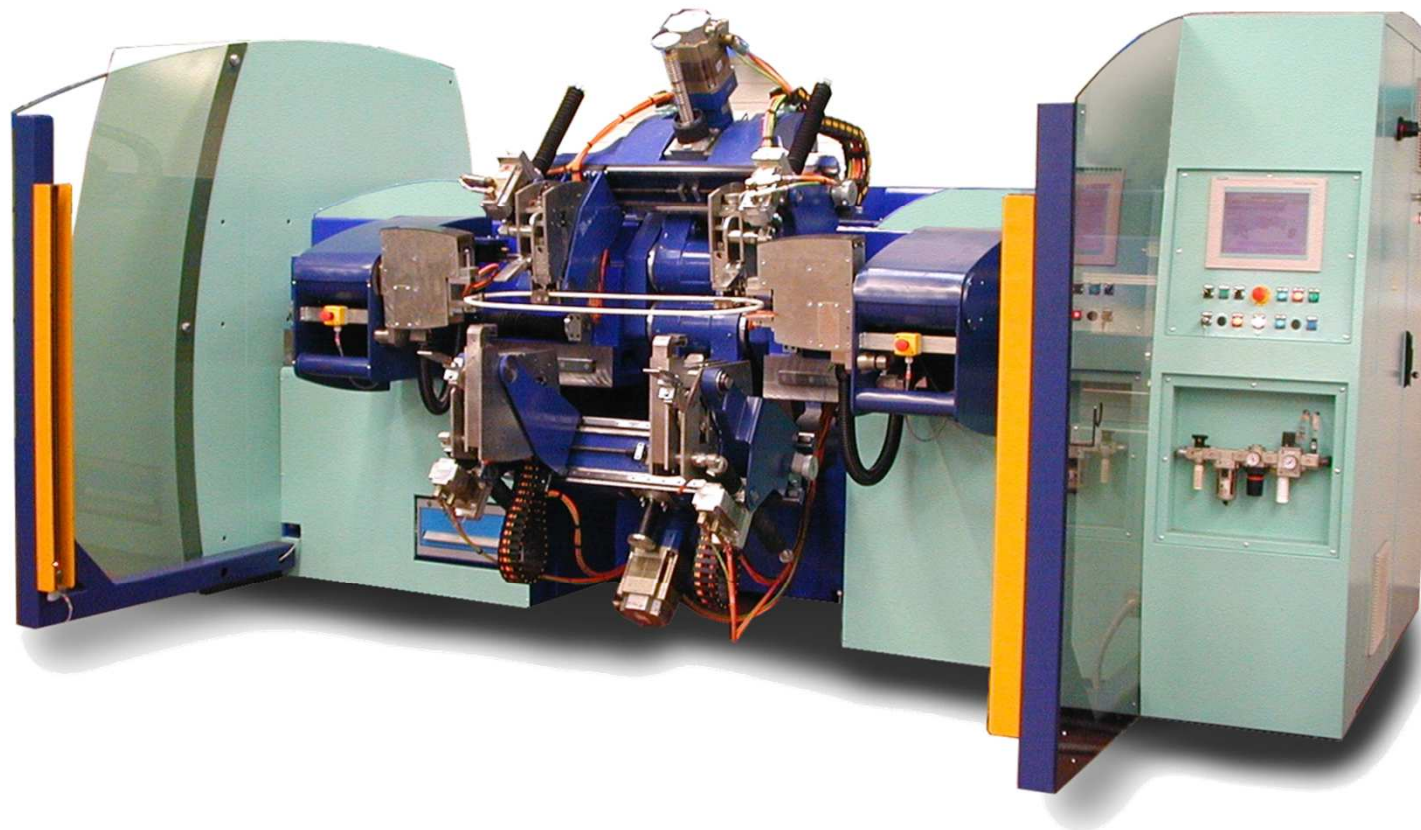
Automatic Spreading Out Machine



NIPPON RIKA KOGYOSHO CO., LTD.

CFM 2004 – Coil Forming Machine

Automatic Spreading Out Machine for Traction Motor



NIPPON RIKA KOGYOSHO CO., LTD.

CFM-U – Coil Forming Machine

Universal Spreading Out Machine



NIPPON RIKA KOGYOSHO CO., LTD.

NIPPON**NR****IKO**

Cable System
Business Unit

Products

Rectangular Wire

- Mica Insulated Wire
- Double Day Glass Wire
- Nomex® Insulated Wire



Products

Strips (Distribution)

- Copper Strips
- Aluminum Strips



Self Control Heater (Distribution)

- Freeze Proofing Heater



Locations

Drawing Copper – Nippon Rika Electric Wire Co., Ltd

Enamel Varnish Coating - Nippon Rika Electric Wire Co., Ltd

Wrapping - Nippon Rika Electric Wire Co., Ltd



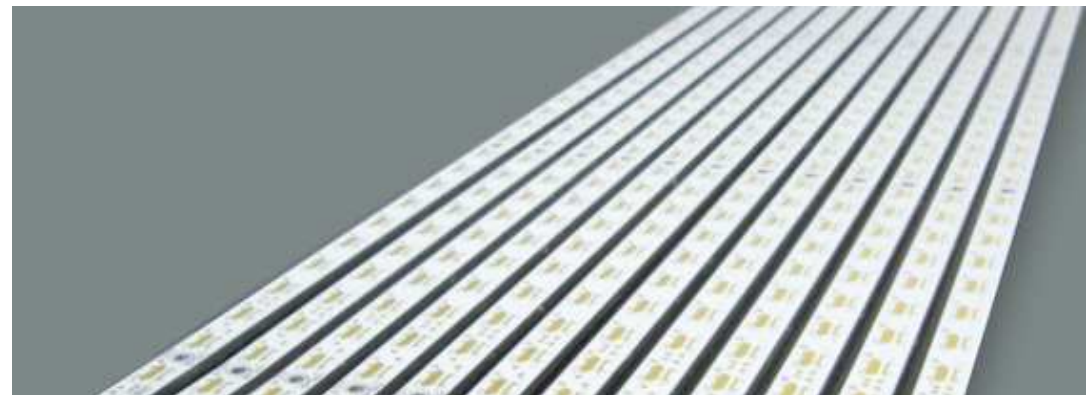
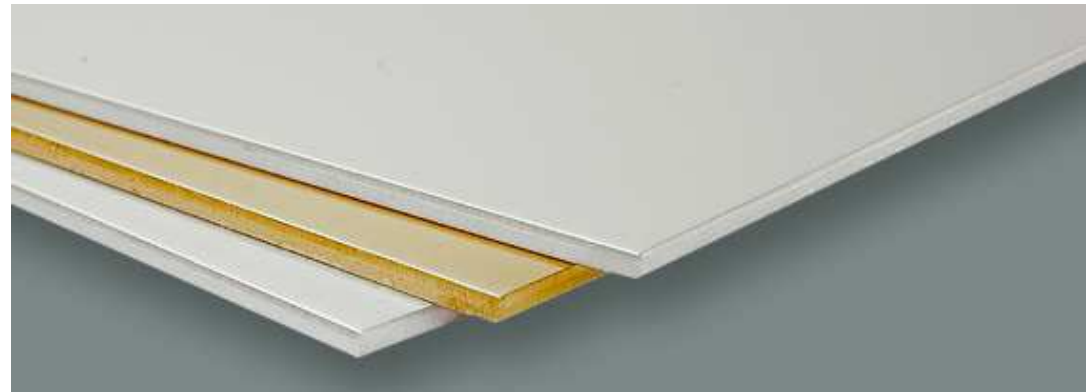
NIPPON RIKA KOGYOSHO CO., LTD.



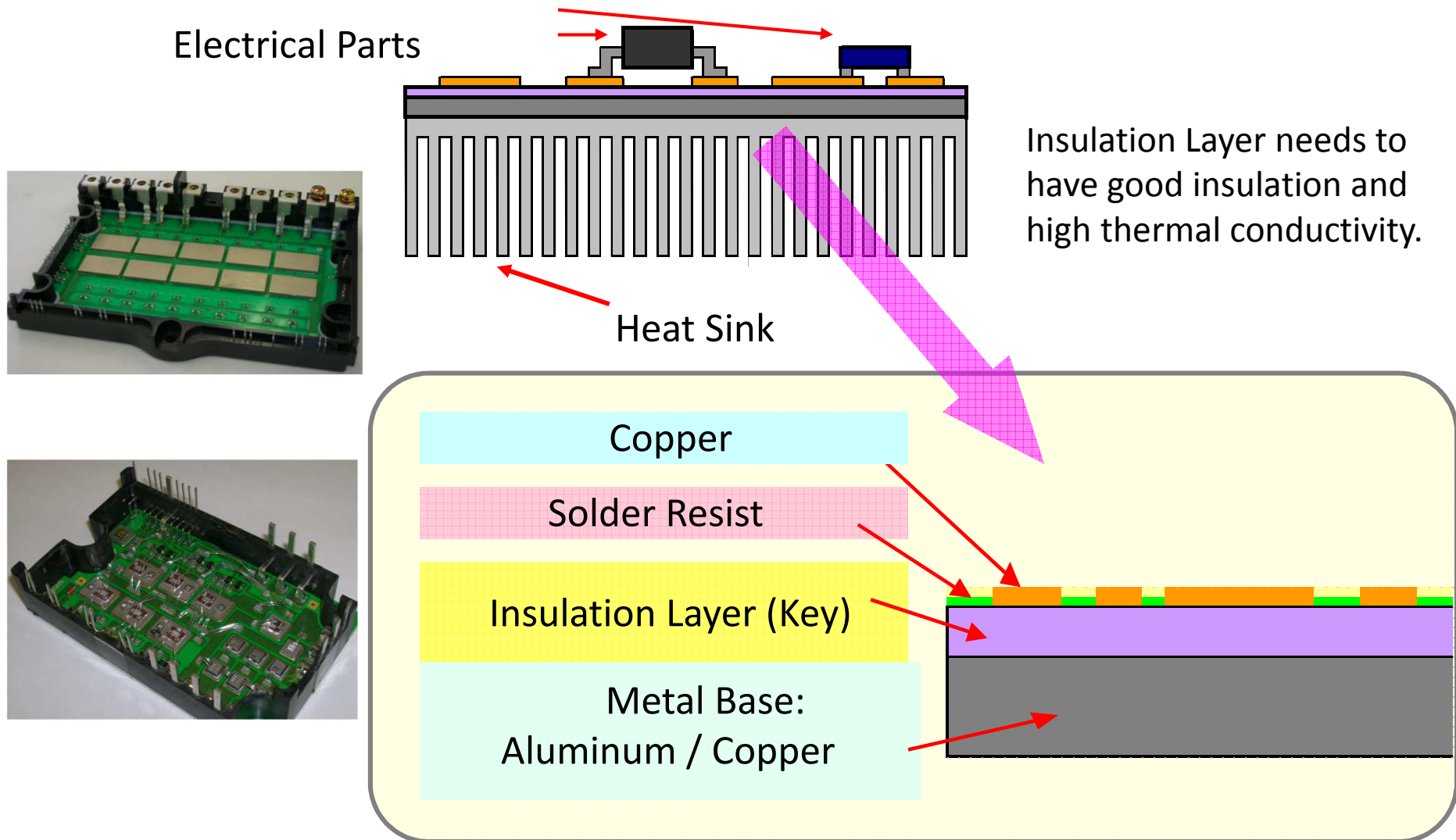
Electronic
Materials
Business Unit

Products

- Clad Copper Laminates
- Metal Base PCB
- FR-4 PCB
- Flexible PCB
- Silicone Varnishes



Structure of Metal Core PCB



Superior Insulation Layer

We, as insulation technology company, developed high performance insulation layer, so that we provide good insulation layer with high thermal conductivity.

Nippon Rika CCL/MCPCB has been applied to LED lightings, Power Modules, and Automotive Industries.



Locations;

Clad Copper Laminates – Tochigi Works / Taiwan Branch
Metal Core PCB – Shimotsuke Factory

Assembling

Nippon Rika Vietnam Co., Ltd offers “cost effective” solutions for assembling electronic parts upon customer’s requests including automotive applications.



Locations;

Ho Chi Minh City Works

NIPPON RIKA KOGYOSHO CO., LTD.



Composite
Materials
Business Unit

NIPPON RIKO KOGYOSHO CO., LTD.

Products

- Epoxy Prepregs (Glass Cloth / Nomex® / Polyester Fleece)
- Polyester Prepregs (Glass Cloth / Polyester Fleece)
- Polyimide Prepregs (Glass Cloth)

- Adhesive Coating Epoxy Sheets for Rotor Insulation
- Epoxy Glass Laminates (G-10 /G-11)
- Polyimide Glass Laminates
- Air-Guide / Air Baffles / Deflectors for Motor & Generator (FRP Composites)

- Insulation Caps (Epoxy / Polyester / Mica)



Locations

Vertical Impregnation Tower – Tochigi Works

Pressing / Molding Machine – Tochigi Works

Machining Equipment – Adachi Engineering Co.,Ltd

FRP Composites – Nippon Rika Vietnam Co.,Ltd



NIPPON RIKA KOGYOSHO CO.,LTD.

Industrial Components Business Unit



NIPPONRIKA Group has been developing new technologies which any other companies have ever invented.

NIPPON RIKA KOGYOSHO CO., LTD.

Products - Distribution

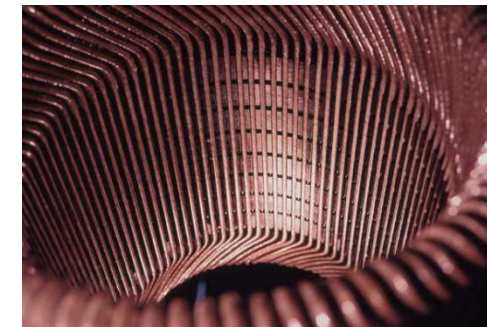
Silicone Products

- Adhesive Sealant
- Silicone Resins
- Hardcoats
- Surface Modifiers
- Organommodified Fluids



Insulation Resins

- Epoxy Resins
- Insulation Varnishes (Solvent / Non Solvent)
- Varnishes for Magnet Wire
- Casting Resins



Products - Distribution

UST System

- Rainwater Storage System
- Environmentally Harmless



NIPPONRIKA

Designing Energy Drive

Aiming for Next Generation.
We are now just at the beginning.

NIPPON RIKA KOGYOSHO CO., LTD.