TMEIC

21 II Series

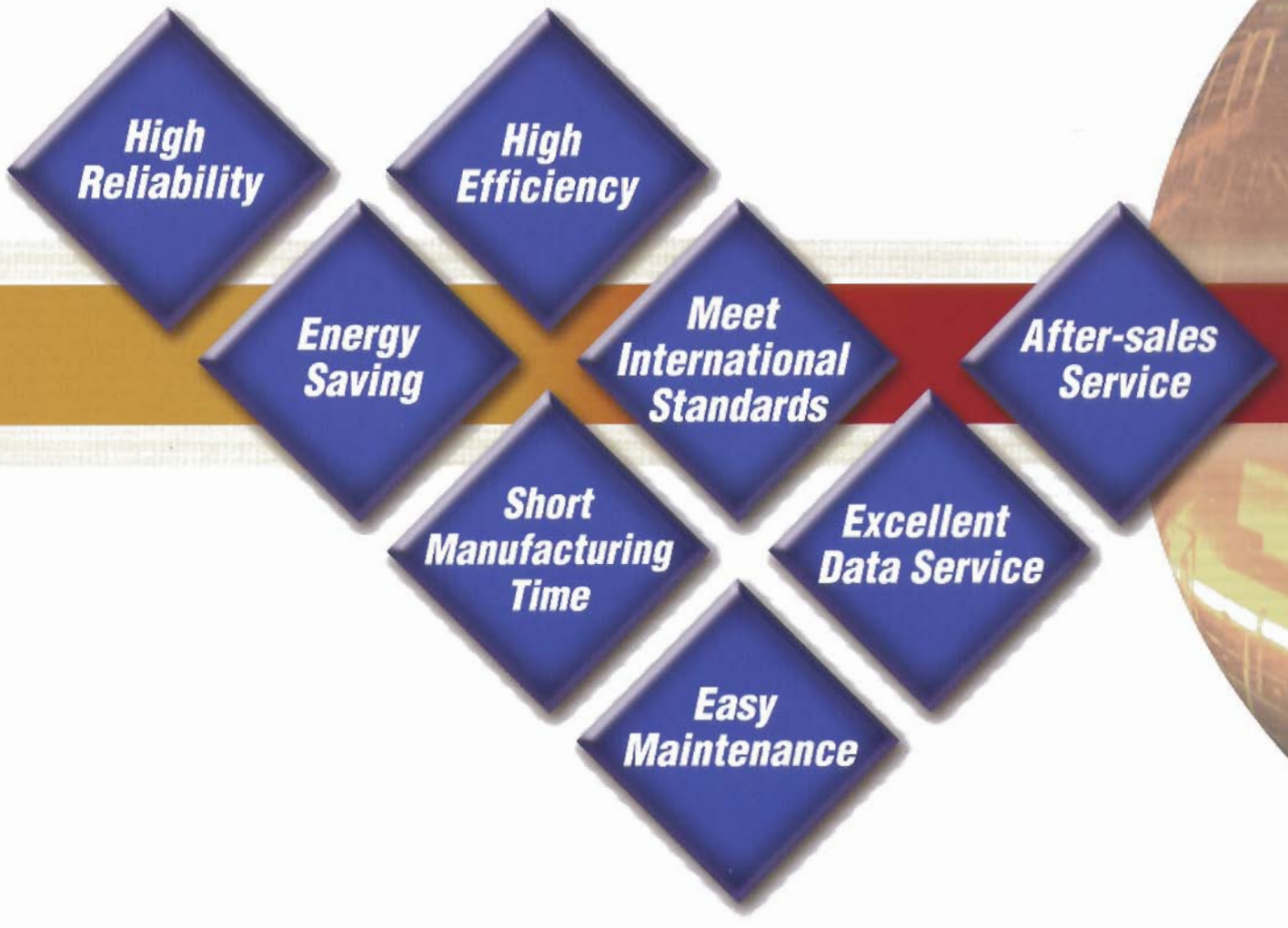
Squirrel Cage Three Phase Induction Motors
Frame Size 250～900
Capacity 37kW～20000kW (50HP)～(26800HP)

21 II Series

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEMS CORPORATION

Evolution Type 21 II Series

After great success with **21** Series we are proud to announce the birth of SERIES II. Advances in technology and the voices of our many customers (VOC) around the world have enabled us to design and build our enhanced series II motors. Our customers have frequently requested to focus on application requirements, high quality, low cost, and high performance. All of these factors have brought the new **21** Series II Motors.



Features

Lower life cycle cost and products improvements

Meet International Standards

Meet the following standards

IEC NEMA BS
AS CSA API

Short Manufacturing Time

L II Series (4P-5000kW Class) 8weeks
M II Series (4P-2000kW Class) 6weeks
F II Series (4P-132kW Class) 10days

- Above index is based on horizontal foot mount standard machine.

High Efficiency Machine Utilized CAE Technique

CAE technique has been applied to analyze heat transfer, flux density distribution of the core, cooling characteristics and deformation of stator coil end which are the most important items of motors. These factors realize high efficiency machines.

High Insulation Technique

- Evolution of insulation materials and manufacturing techniques have realized longer life.
- Surge capability for inverter drive applications.

Full Data Service

Performance data, drawings and technical particulars are provided in electronic format.

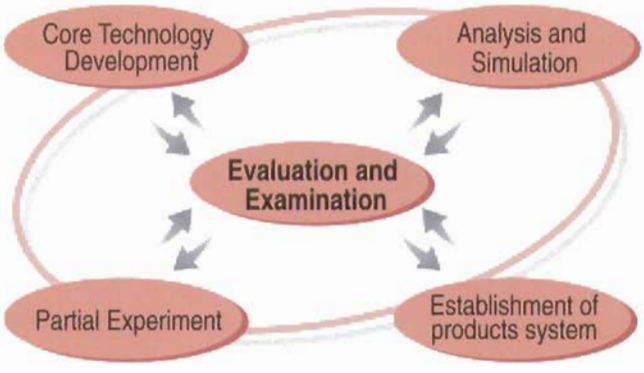
High Quality and Reliability

Improvements of **21** II Series are based on the experiences gathered for the **21** Series in field operation and VOC. Highly reliable insulation system, low vibration, the most suitable bearing selection and standardization of components.

Easy Maintenances and After-sales Services

- Bearing life of rolling type is L10 100,000 hours, and the regreasing interval is also extended.
- World wide standard sleeve bearing is used.
- After sales service is available through us.

21 II Series is pursuing more high reliability based on various kinds of experiences, fundamental techniques of **21** Series, and CAE analysis technique.

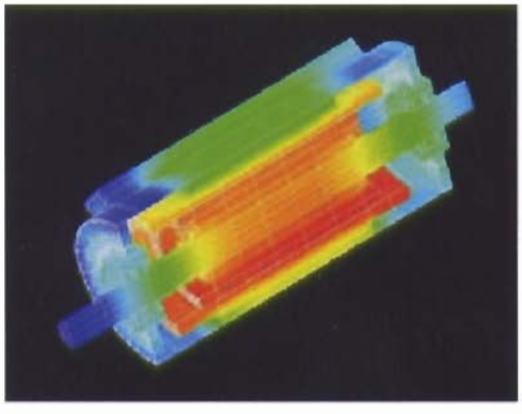


● *Insulation Technology*

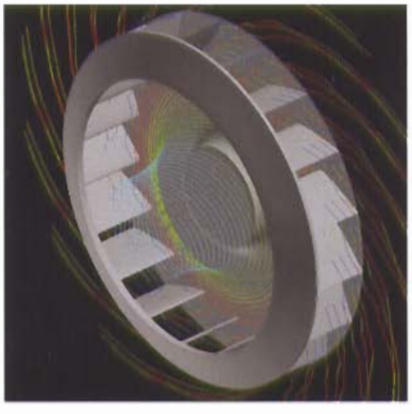
Development of high reliable insulation system

● *Analysis Technology*

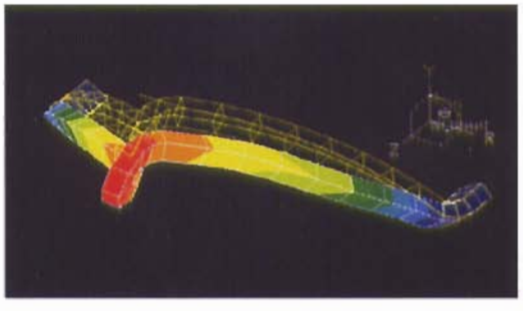
Three dimensional analysis of heat transfer



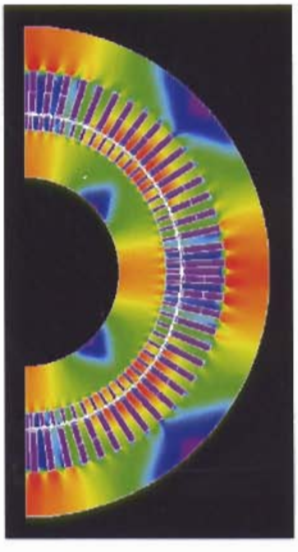
Cooling characteristic analysis



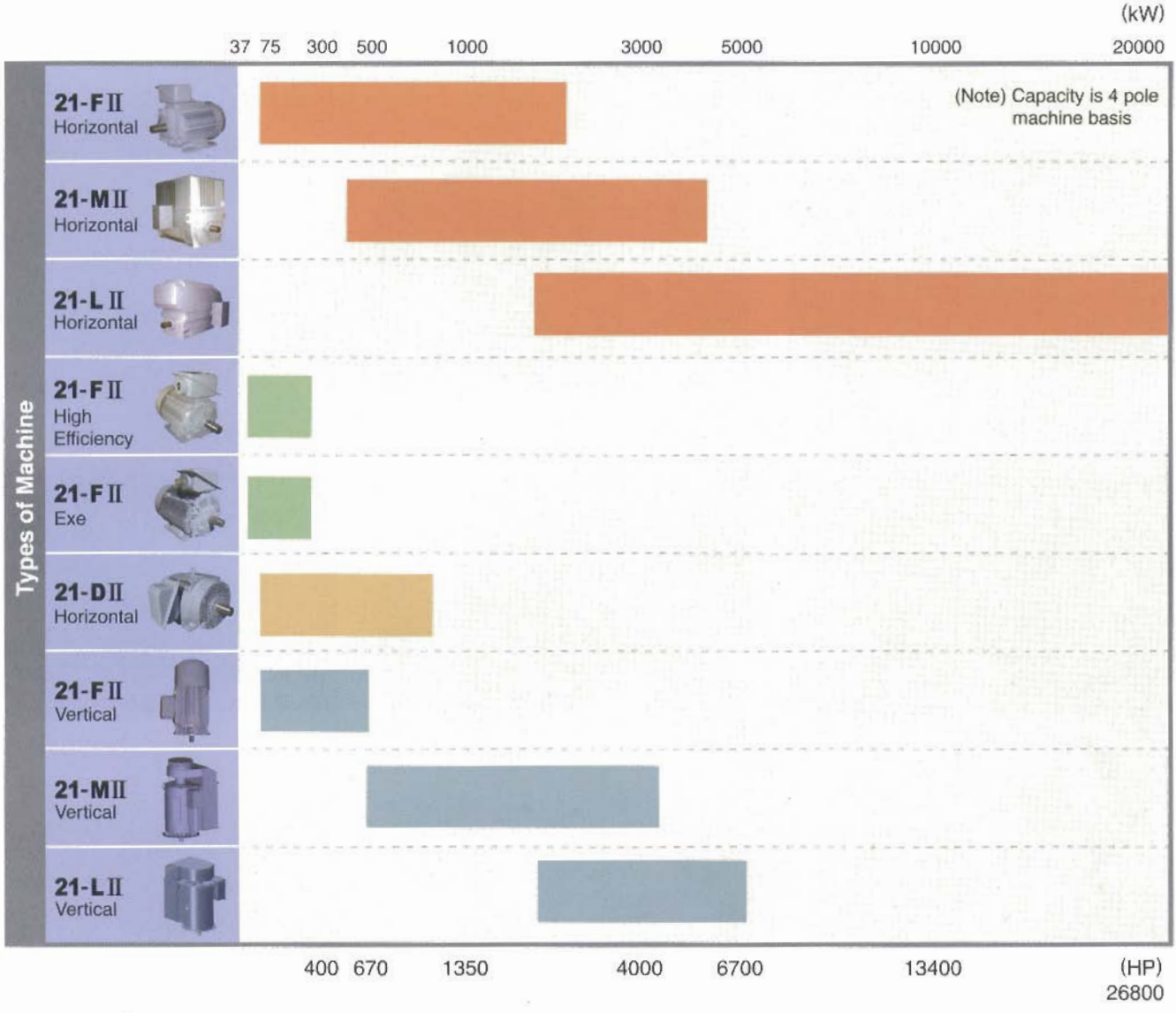
Deformation analysis of stator coil end windings



Electromagnetic analysis



21 II Series *Line up*



Types			Definition	Frame Size
Horizontal	Open Drip	21-D II	ODP	250~315
	Totally Enclosed Fan Cooled	21-F II	TEFC	250~500
	Totally Enclosed Fan Cooled High-Efficiency Series			250~280
	Increased Safety Explosion Exe			250~280
	Drip Proof	21-M II & 21-L II	DP	315~900
	Open Drip Weather Protected		WP	
	Totally Enclosed Air to Air Cooled		TEAAC	
	Totally Enclosed Water to Air Cooled		TEWAC	
Veritical	Totally Enclosed Fan Cooled	21-F II	TEFC	250~315
	Drip Proof	21-M II & 21-L II	DP	355~630
	Open Drip Weather Protected		WP	
	Totally Enclosed Air to Air Cooled		TEAAC	
	Totally Enclosed Water to Air Cooled		TEWAC	

Our World Wide Application Experience

The world wide application experiences we have amassed in Paper, Steel, Petro-chemical, Mining, Power and Water industries, have provided wealth of important technical information that has been the catalyst to the development of the **21** Series and the new born **21** II Series.









Quality-Certified by Third Parties

21 II Series motors are manufactured to meet ISO9001 and ISO14001, having been certified by third parties such as Baseefa, CSA, LLOYD's etc.

Manufacturing Location, Service & Support

- Quick response and service in our world wide network.
- Proposal for preventive maintenance using diagnosis instrumentations.
- Providing technical data via the internet.

<Manufacturing Places>

Mie Works

2121 Nao, Asahi-cho, Mie-gun,
Mie 510-8521, Japan

Keihin Works

2-4 Suehiro-cho, Tsurumi-ku,
Yokohama 230-0045, Japan

Nagasaki Works

6-14 Maruo-machi,
Nagasaki 850-8652, Japan

Togitsu Works

517-7 Hamada-go, Togitsu-cho,
Nishisonogi-gun, Nagasaki 851-2102, Japan

Overseas Network