

After become a JMAG WEB MEMBER, various technical materials can be viewed. In addition, JMAG-Express Online, from which motor design can be carried out on the Web, can be used with the same ID.

11,055
members
in the world
*As of May, 2024

What are available after registering to JMAG WEB MEMBER

White Papers

White Papers feature particularly substantial supporting information for JMAG performance evaluations, application limits, modeling methods, etc.

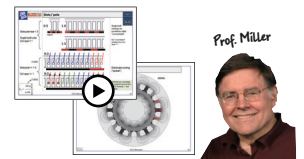
[W-OP-165] Solving Geometry Conflicts in GA

Optimizations with Large Numbers of Geometric Parameters

[W-MB-167] Motor Plant Model Considering AC Loss for Control Calibration

Webinar

- Prof. Miller:Brush up on Motor Design!" (Updated monthly)
- Video for Introducing the New Functions of JMAG



JMAG-RT Model Library

Various sample files of JMAG-RT with MATLAB/Simulink can be downloaded



JMAG Users Conference Proceedings

More than 580 materials presented in Japan, the U.S., Europe, and other countries are available to read. Topology Optimization, AI, MBD, Material.

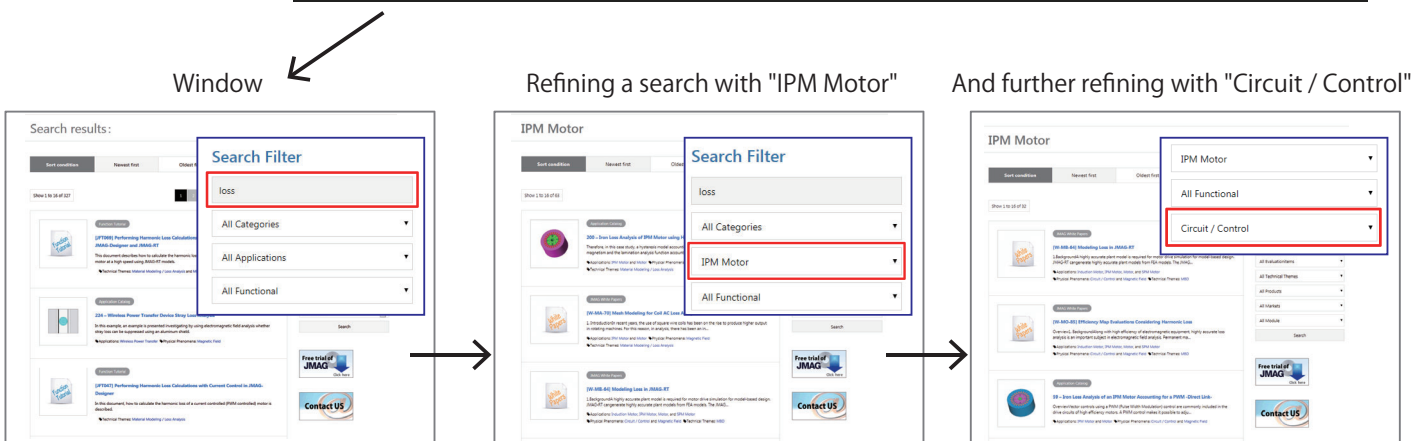
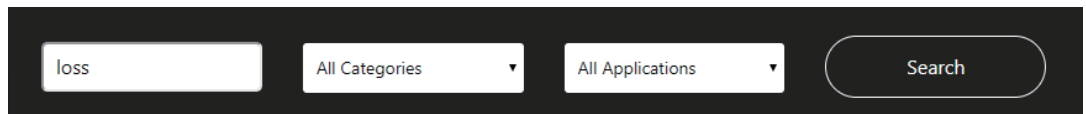
Many more services are available to members only. For details, see the JMAG website.

Searching for material

By combining multiple categories, searching or refining a search can be performed.

- Document categories ... Function tutorials, application catalogs, white papers
- Analysis types Magnetic field analysis, electric field analysis, cogging analysis, etc.
- Module lists and others

Example:
Searching by "loss"



*The names of products and services described herein are the trademarks or registered trademarks of the respective owners.

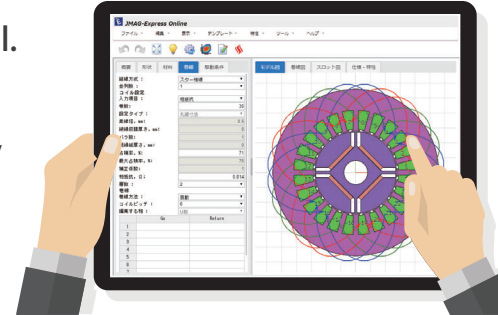


Capable of Computing Basic Motor Characteristics in Just 1 Sec

JMAG-Express Online is a parameter-based motor design support tool.

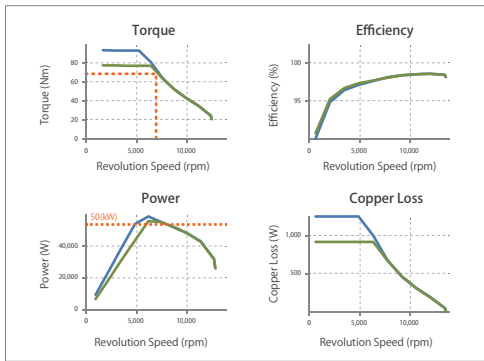
JMAG-Express Online now has the ability to evaluate all the motor characteristics like Torque- Speed characteristics, Loss characteristics, Inductance characteristics, etc.

You can design motors anytime, anywhere, on the go or at home.



Evaluate torque, efficiency, loss, and inductance characteristics with graphs and numerical values

Rotation speed vs torque characteristics, iron loss / copper loss characteristics, etc. are displayed in graphs in an instant. Motor characteristics can be confirmed from tables of machine constants.



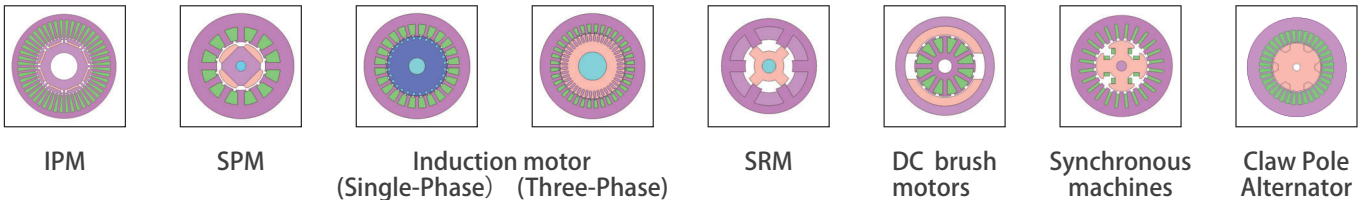
Performance Graph

Machine Constant		Dimension	
Revolution Speed	N, rpm	7000	
Inductance	Ld, H	1.744e-04	Outer Diameter, mm
	Lq, H	3.016e-04	Gap Length, mm
	Self Inductance, H	1.586e-04	Stack Height, mm
	Mutual Inductance, H	-7.922e-05	Number of Slots
	Kt, Nm/A	0.2337	Outside Diameter, mm
Torque Constant	Ke, V s/rad	0.2699	Inside Diameter, mm
			Tooth Width, mm
Magnetic Circuit	Average Teeth Flux Density, T	0.6113	Slot Opening Width, mm
	Average Back Yoke Flux Density, T	0.3369	Core Back Width, mm
	Average Gap Flux Density, T	0.3751	Tooth Tang Depth, mm
	Magnet Flux Linkage, Wb	0.04965	Number of Magnet Poles
	Phase Current(RMS), A	56.83	Outside Diameter, mm
Electric Part	Wire Current Density, A/m ²	2.194e+06	Shaft Diameter, mm
			Position of Magnet, mm
Power	Torque, Nm	18.31	Magnet Thickness, mm
	Efficiency, %	95.06	Magnet Width, mm
	Power Factor	1.34e+01	Clearance between Slits, mm
Loss	Copper Loss, W	48.38	Slit Width, mm
	Iron Loss, W	647.4	Slit Depth, mm
Electric Circuit	Phase Voltage(RMS), V	102.1	
	Line Voltage(RMS), V	176.8	

Design sheet

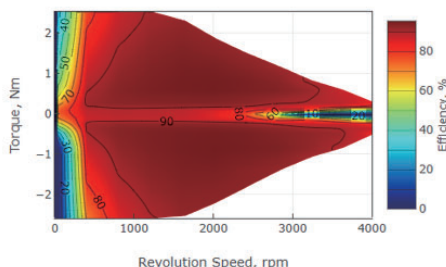
Define geometries with templates

Templates for PMSMs, induction machines and brush motors are available.



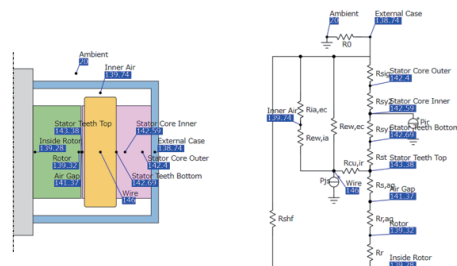
Efficiency Maps

When creating maps, voltage and current limits can be applied. Multiple maps can be compared while using the parametric function.



Temperature Evaluation

The thermal model is evaluated using various heat generation sources like Copper Losses, Iron Losses, and Mechanical losses.



Thermal equivalent circuit model