

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.

**15,100**  
members  
in the world  
\*As of August, 2025

## 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.

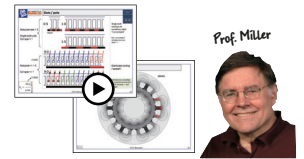
[W-OP-165] Solving Geometry Conflicts in GA

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.

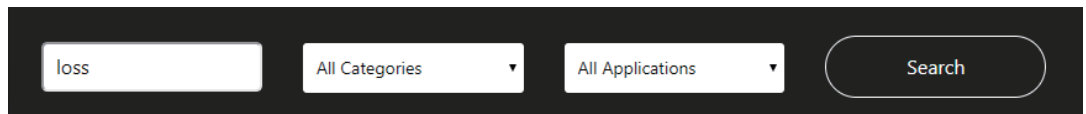
Many more services are available to members only. For details, see the JMAG website.

## 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"



Window

Refining a search with "IPM Motor"

And further refining with "Circuit / Control"

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

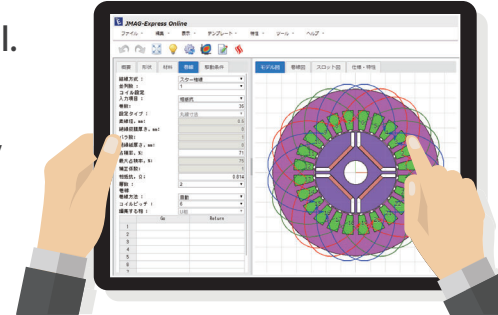


## Capable of Computing Basic Motor Characteristics in Just 1 Sec

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

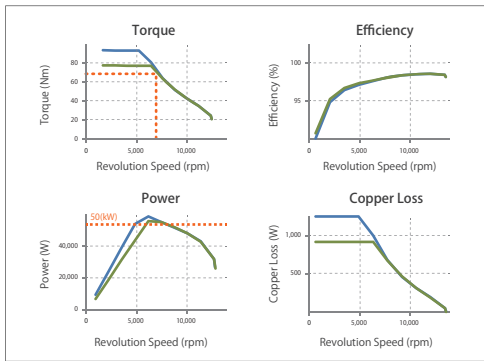
JMAG-Express Online now has the ability to evaluate all the motor characteristics like Torque- Speed characteristics, Loss characteristics, Inductance characteristics, etc.

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.



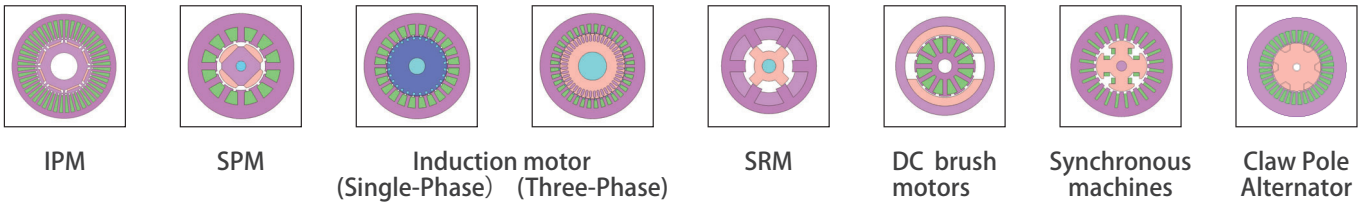
Performance Graph

Machine Constant			Dimension			
Revolution Speed	N, rpm	7000	All	Outer Diameter, mm	201.3	
Inductance	Ld, H	1.744e-04		Gap Length, mm	0.83	
	Lq, H	3.016e-04		Stack Height, mm	201.3	
	Self Inductance, H	1.586e-04		Number of Slots	48	
	Mutual Inductance, H	-7.922e-05	Outside Diameter, mm	201.3		
Torque Constant	Kt, Nm/A	0.2337	stator : so_000	Inside Diameter, mm	102.7	
	Voltage Constant	Ke, V s/rad		0.2699	Tooth Width, mm	4.026
Magnetic Circuit	Average Teeth Flux Density, T	0.6113		Slot Opening Width, mm	2.5	
	Average Back Yoke Flux Density, T	0.3369		Core Back Width, mm	15.09	
	Average Gap Flux Density, T	0.3751		Tooth Tang Depth, mm	2.012	
	Magnet Flux Linkage, Wb	0.04965		Number of Magnet Poles	8	
Electric Part	Phase Current(RMS), A	56.83		rpm_rotor : rip_000	Outside Diameter, mm	101
	Wire Current Density, A/m <sup>2</sup>	2.193e+06			Shaft Diameter, mm	40.3
Power	Torque, Nm	18.31		Position of Magnet, mm	40.8	
	Efficiency, %	95.06		Magnet Thickness, mm	3.52	
	Power Factor	1.34e+01	Magnet Width, mm	23.2		
Loss	Copper Loss, W	48.38	Clearance between Slits, mm	3.52		
	Iron Loss, W	647.4	Slit Width, mm	3.52		
Electric Circuit	Phase Voltage(RMS), V	102.1	Slit Depth, mm	1.51		
	Line Voltage(RMS), V	176.8				

Design sheet

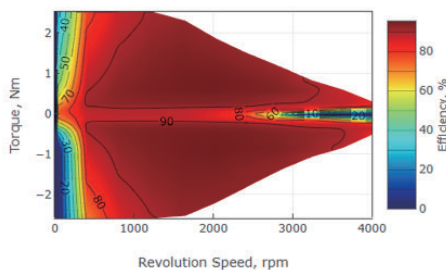
### Define geometries with templates

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



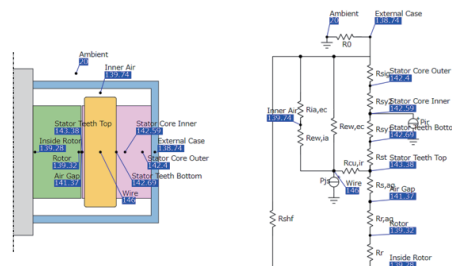
### Efficiency Maps

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