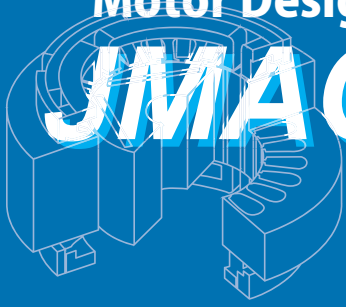


Free

August 2019 Major version up!

Motor Design Tool



# JMAG-Express Online

for Rotating Machines

The latest web version of JMAG-Express, which can compute basic motor characteristics in **1 sec!**

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

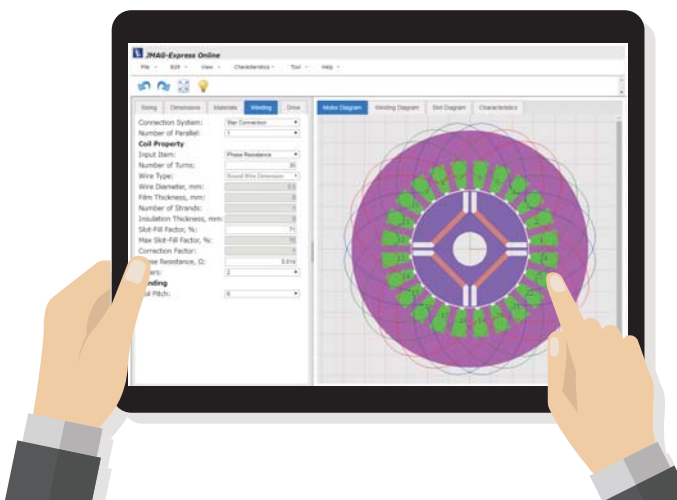
It is possible to obtain in an instant the startup voltage constant, torque constant, inductance characteristics, current vs torque characteristics, rotation speed vs torque characteristics, iron loss / copper loss characteristics, etc. merely by inputting a geometry template, materials, windings, and drive conditions.

Because JMAG-Express Online can be used with tablets and smartphones, you can design motors anytime, anywhere, on the go or at home.

August 2019 Major functions have been added, including parametric analysis.

Start using JMAG-Express Online

[www.jmag-international.com/express/](http://www.jmag-international.com/express/)



JMAG-Express Online can be used for free after creating an account.



Main functions of JMAG-Express Online are on the reverse side.

Recommended browser

JSOL CORPORATION

Harumi Triton Square Tower Z 5th Floor,  
1-8-12 Harumi, Chuo-ku, Tokyo, 104-6205, Japan  
TEL +81(0)3-5859-6007  
FAX +81(0)3-5859-6030  
E-mail : info@jmag-international.com



With over 220 analysis use cases, JMAG's homepage is full of information. Please come visit!

[www.jmag-international.com](http://www.jmag-international.com)



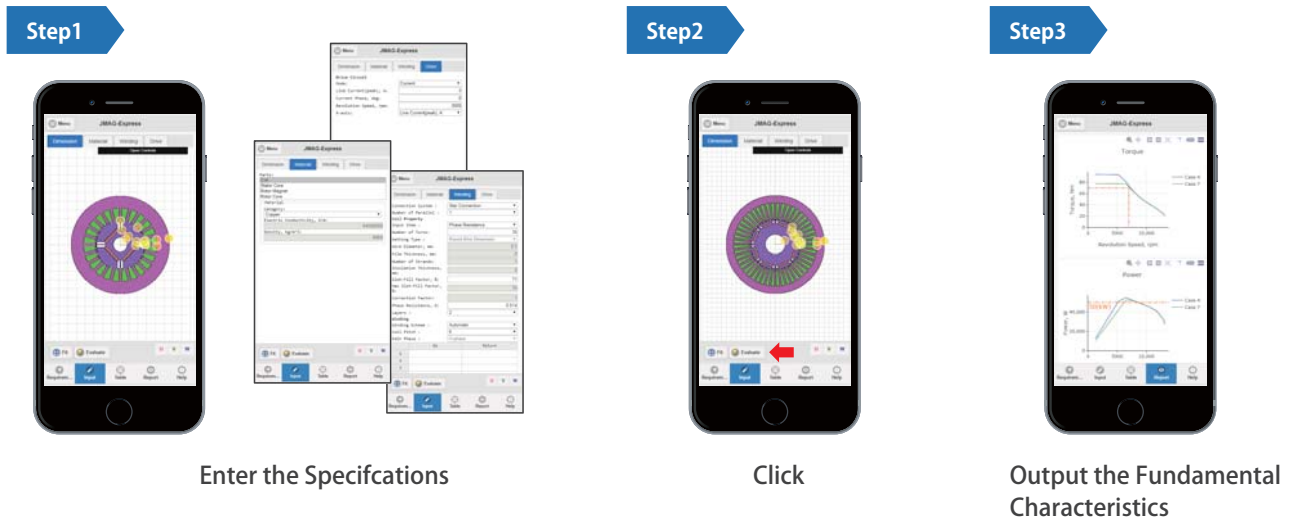
JMAGTV

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# Main functions of JMAG-Express Online

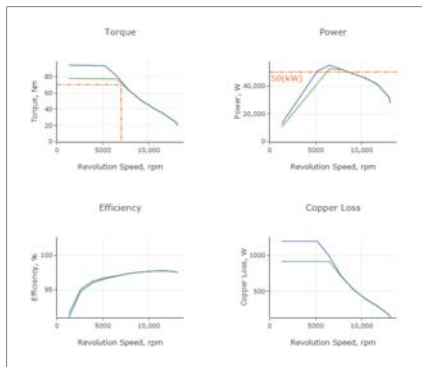
## ■ Extract motor characteristics in an instant

Displays motor characteristics from design specifications with one click.  
Requires no analysis experience.



## ■ 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.

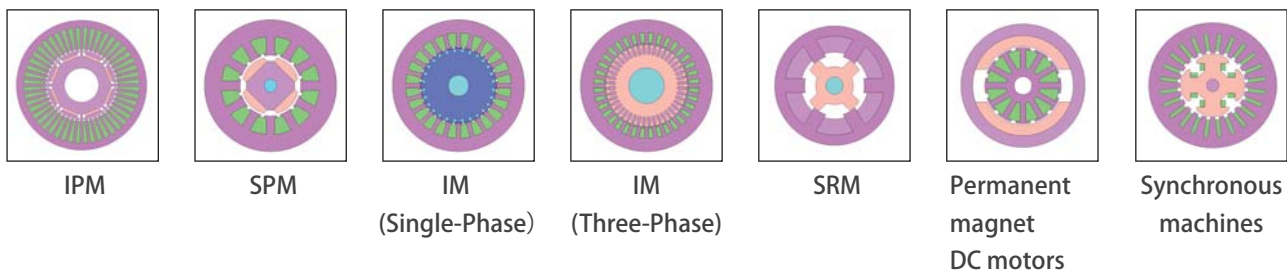


Machine Constant			Dimension			
Revolution Speed	N, rpm	7000	All	Outer Diameter, mm	201.3	
	Ld, H	1.744e-04		Gap Length, mm	0.85	
	Lq, H	3.016e-04		Stack Height, mm	201.3	
	Self Inductance, H	1.586e-04		Number of Slots	48	
Inductance	Mutual Inductance, H	-7.932e-05	stator : so_000	Outside Diameter, mm	201.3	
	Kt, Nm/A	0.2337		Inside Diameter, mm	102.7	
Torque Constant	Ke, V/srad	0.2699		Tooth Width, mm	4.026	
	Average Teeth Flux Density, T	0.6113		Slot Opening Width, mm	2.5	
Magnetic Circuit	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	
	Phase Current(RMS), A	56.83		Outside Diameter, mm	101	
Electric Part	Wire Current Density, A/m <sup>2</sup>	2.193e+06		ipm_rotor : rip_000	Shaft Diameter, mm	40.3
	Torque, Nm	18.31			Position of Magnet, mm	40.6
Power	Efficiency, %	95.06	Magnet Thickness, mm		3.52	
	Power, W	1.34e+04	Magnet Width, mm		23.2	
	Power Factor	0.8114	Clearance between Slits, mm		3.52	
Loss	Copper Loss, W	48.38	Slit Width, mm		3.52	
	Iron Loss, W	647.4	Slit Depth, mm		1.51	
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.



## ■ Geometry sizing

A rough physical size can be decided simply by entering the minimum output expected of the motor. Geometry and drive conditions can also be narrowed down by entering more information.