

May 21, 2020

## Press Release

### Brushed DC motor options.

**maxon's brushed DC motors offer two options that allow for a customised selection to fit individual application requirements.**

The commutation system can be based on graphite brushes (GB) or precious metal brushes (EB). When considering the best type of brushed motor for your application, becoming familiar with the specific type of brushed DC motors on offer is key to ensuring the most efficient use of the motor technology and maximising the usage over its lifetime.

Graphite brushes are better suited for high motor currents usually found in larger motors. They can perform well in the presence of high and frequent current peaks usually created by start-stop or reversing actions, this is very common in servo motor applications. However these advantages can come at a cost. GB motors have a higher friction leading to higher no-load currents and consequently higher electromagnetic emissions.

In contrast, DC motors with precious metal brushes have very low friction leading to higher efficiency and less noise and electromagnetic interference. They are less expensive than their counterpart and can be manufactured in smaller dimensions. EB motors can also be manufactured with capacitor long life (CLL) technology. The use of CLL design extends the operating life of DC motors by suppressing brush sparking. It achieves this by using the principles of an RC filter. During brushed commutation, the opening and closing of the contacts leads to induction arcing that produces electro-erosion. By creating an RLC resonant circuit between neighbouring winding segments, a damped oscillation is triggered, increasing the life expectancy of the precious metal brushes and reducing electromagnetic emissions.

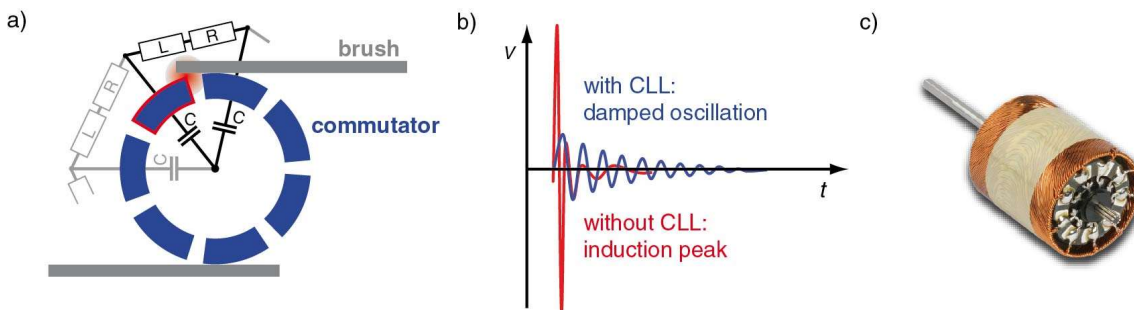
In summary, GB motors are bigger, can work with higher currents and are ideal for start-stop operations. Precious metal commutation is present in smaller motors and is best used for continuous operation at low currents.

For more information contact maxon motor Australia tel. +61 2 9457 7477.

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Length of this update: 292 words

The press release is available on the internet at: [www.maxongroup.net.au](http://www.maxongroup.net.au)



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#### **The Swiss specialist for quality drives**

maxon is a developer and manufacturer of brushed and brushless DC motors, as well as gearheads, encoders, controllers, and entire mechatronic systems. maxon drives are used wherever the requirements are particularly high: in NASA's Mars rovers, in surgical power tools, in humanoid robots and in precision industrial applications, for example. To maintain its leadership in this demanding market, the company invests a considerable share of its annual revenue in research and development. Worldwide, maxon has more than 3000 employees at nine production sites and is represented by sales companies in more than 30 countries.