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MMC Electronics (a different twist)

Most Festool power tools are driven by universal series wired motors. Having been in the industry for nearly a century, Festool builds some of the best engineered and most efficient motors in the world. Under full power, this type of motor will settle at a specific top speed when powered up. This top speed is naturally limited by counter Electro Motive Force. Counter EMF can be reduced by well engineered, high precision construction techniques. This results in motors that develop much higher top speeds than the norm. The smaller high efficiency motors that are made by Festool reach an ideal useable speed without needing any type of top speed limiting control. The palm sanders and the Domino joiner are examples. Some have adjustable speed, but don't need top speed limiting. However the same efficient design is used in building the larger Festool motors and their natural top speed is far too fast to be useable without some means of control to limit their speed.

MMC stands for Multi Material Control. The speed of the larger motors is controlled by an electronic module that is electrically coupled directly to the spinning armature by means of a tachometer. This is similar to an automobile cruise control. Not only is the top speed regulated, but most of the large tools also have adjustable speed, which allows for use with different applications. Also, a "soft start" feature is included which gradually increases the speed of the motor on start up. This prevents these larger tools from sudden movements when starting. And most of the heavy duty motors also have temperature and current overload protection.

If our circular saw motor is run directly off line current without the MMC front end, the blade might reach speeds up to 8000 RPM or more, which would quicken bearing wear, blade wear, and could be dangerous. The tachometer feedback MMC electronic control maintains a consistent speed, and when the saw is under load, it will conduct whatever current necessary to the motor to keep that constant speed. This is when that extra power, normally held back by the MMC control, is called upon. And the constant blade speed results in superior cut quality. The same holds true for the Routers and other MMC controlled tools.

The chart on the following page describes where MMC or other electronic control is used in our family of tools.

David McGibbon
Service/Tech Support

FESTOOL

Festool Electronics

Tools	Soft Start	Controlled Idle Speed	Constant Speed Under Load	Stepless Speed Adjustment (V.S.)	Temperature Protection	Current-Triggered Overload Protection	Type
TS 55 & 75 	X	X	X	X	X	X	M
OF 1010/OF 1400 	X	X	X	X	X	X	M
Rotex 125/150 	X	X	X	X	X	X	M
RAS 115 	X	X	X	X	X	X	M
Jigsaws PS/PSB 300 	X	X	X	X			M
OF 2000 	X	X	X	X			M
ETS 150 	X	X	X	X			M
HL 850 	X	X	X				M
ETS 125 				X			E
Orbital Sanders (RS 2, RTS 400, DTS 400, DX 93) 				X			E
DF 500 							0

M = MMC-Electronic
E = Standard electronic
O = No electronic