

DuPont™ Engineering Polymers

Help Make Energy Efficient Motor



Description/Application

A high-efficiency, variable speed fan motor with patented technology RF200 lends itself to DuPont Rynite® PET and Zytel® nylon resins. The RF200 motor has a shaft power rating of up to 1 hp.

End-user

Wellington Drive
Technologies Limited
PO Box 302-533, North Harbour
Auckland 1330
New Zealand
Contact : Simon Fawkes
Tel : (64) 9 414 6590
Fax : (64) 9 414 6591
E-mail : info@wdtl.com
Website : www.wdtl.com

Benefits Gained

Higher efficiency - The RF200 motor incorporating Rynite® PET has an efficiency up to 80%. Its part-speed efficiency is up to five times better than triac controlled induction motors. High efficiency means less waste heat and a low operating temperature, typically around 30 °C. These features make it ideal for light industrial and domestic air moving applications, as well as heat-sensitive applications like evaporative cooling.

Reduced product cost - Reduced part count, lower part cost and simplified assembly all help to reduce the total product cost.

Lower capital cost - Fewer components, ease of moulding plastic and elimination of machining operations reduce the cost of tooling.

Design flexibility and integration - The single piece rotor doubles as the hub for an adjustable-pitch axial fan.

Lighter weight - The weight of the motor using DuPont Engineering Polymers is only one third of the weight of a conventional PSC induction motor made of metal.

Vertically integrated manufacturing - Use of an existing injection moulding facility reduces the dependence on external suppliers.

Material Chosen and Why

Rynite® FR530 was chosen over glass reinforced PBT because of its higher service temperature capabilities. It maintains its long-term properties at elevated temperatures. The UL approval process was assisted by DuPont technical support and expertise. Included in this is the use of DuPont's pre-approved Electrical Insulation Systems. Rynite® PET was also chosen for its mechanical properties such as dimensional stability, added strength and stiffness. Zytel® FR70M30V0 was selected for the injection moulded rotor due to its over-moulding performance and dimensional stability.



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