



# Garrett Wade

## Technical Memo T52

Re: 25T05.01 25T05.02

To Customers of the Stove Top Fan  
From The GarrettWade Technical Department

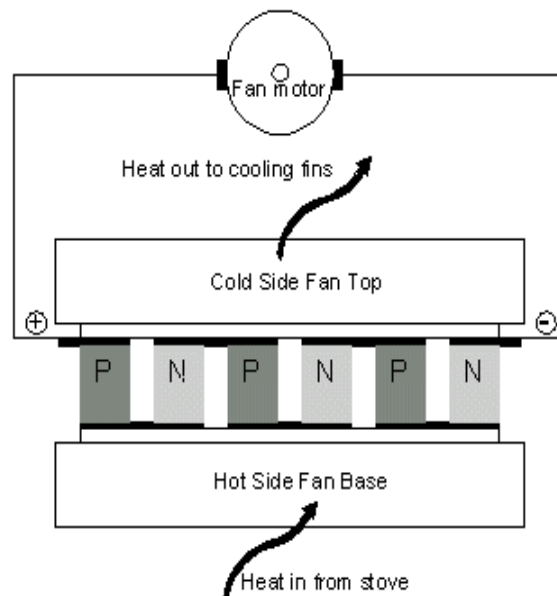
The stove top fan generates its own electricity through differences in temperature. The base must make contact with a heat source of at least 150°F (65°C) and the top of the fan must remain cool. The fan draws cooler air from behind in order to operate. The rotation of the blade, the cooler air, and the heat source are the essential elements needed for the fan to operate.

The fan contains a thermoelectric module which acts as a small generator to power the fan's motor. When this generator module experiences a heat differential between its top and bottom surfaces, it pumps out electricity. The bottom surface of the module is heated by the base of the fan, while the top of the module is kept cooler by the fan's top cooling fins.

### The Seebeck Effect

The generator module is a unique semiconductor device that relies upon the Seebeck effect to generate electricity. When two dissimilar semiconductors (p-type and n-type) at the same temperature are connected together they establish a static electric potential difference. With the introduction of a temperature difference heat flows across the joined semiconductors which in turn permits electrons to flow. This electron flow, or current, powers the fan motor.

*GarrettWade Customer Service*



For further assistance, call the Garrett Wade Technical Department at 800 221 2942, or email us at [mail@garrettwade.com](mailto:mail@garrettwade.com)