Scale Electric - Fisher & Paykel washing machine motors for electricity generation

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Generator using a Fisher & Paykel washing machine motors

- The Fisher and Paykel smart drive motor is a permanent magnet motor.
- Most electric motors used in household equipment do not have permanent magnets.
- The permanent magnets mean that these motors make good electricity generators.
- When a magnet passes by a wire it induces a current in it.
- The permanent magnets in the rotating drum part of the motor pass by the coils of wire on the metal spindles of the stationary part of the motor inducing currents in the wire.
- Coils are used so that the length of wire passing the magnet is longer and the current induced larger.
- The motor generates 3 phase 50 V AC electricity (this can be altered with rewiring).
- Only 1 of the 3 phases is used here and rectified to give about 20 V DC at the rate it can be turned with a person's hand.
Rectifier and smoothing added to generator from discarded Fisher & Paykel washing machine motor for model car set

- Single phase rectifier for DC
- Capacitor for smoothing
- Resistor (~ 100 Ω, 10 W) to drop voltage and lose energy so car don’t come off the track

50 V AC inputs from FP washing machine motor (3 phase) only 1 phase used

Motor, is in ‘star’ configuration

~ 20 V DC output

Three phase electricity

Volts

0° 120° 240° 360°