How Food Mixers Work

Food mixers are motorized small appliances. That is, rather than heating something, they move something. In this case, they move or mix food ingredients. Obviously, the motor is a primary component of the food mixer. So are the gears. Gears translate the motor’s rotation to the opposing rotation of the beaters. A speed controller varies the electrical current delivered to the motor, thus allowing the speed of the beaters to be controlled.

There are two types of food mixers: portable (or hand) mixers, and stationary (or stand) mixers. Portable mixers are lightweight, with small motors for easier mixing and blending jobs. Stand mixers use larger motors and components to manage bigger jobs, such as kneading dough or mixing large batches of ingredients.

Servicing Speed Controls

Food mixer speed is controlled by varying the current to the motor. Smaller hand mixers use a speed switch that includes a number of electrical contacts, each increasing current to the motor. Larger units use a variable resistor to control current. Continuity testers or multimeters are useful for checking the operation of either type of speed control. In some cases, contacts can be cleaned to improve function. However, in many cases, problems caused by speed controls can only be solved by replacing the controller.

How to Service Gears

Food mixers work so well because they rotate the beaters in opposing directions to blend the ingredients. This opposing rotation is produced by the gears.

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<th>Troubleshooting Food Mixers</th>
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<td><strong>Problem</strong></td>
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| Doesn’t work at all | 1. Refer to Troubleshooting Chart on page 205.  
2. Check switch. If faulty, service switch.  
3. Check motor fuse. If defective, replace fuse. |
| Mixer doesn’t function at all speeds | 1. Check speed control. If faulty, service or replace. |
| Motor hums, but beaters don’t turn | 1. Check motor. If seized, replace. |
| Mixer vibrates excessively | 1. Check beaters. If shafts are bent or ends are worn, replace beaters.  
2. Check gears. If broken or misaligned, service gears.  
3. Check motor. If shaft is bent or motor is sparking, replace motor. |