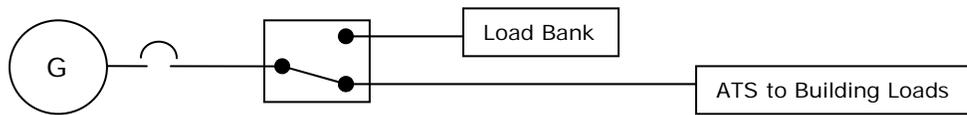


Technical Brief – How are load banks connected to emergency generators?

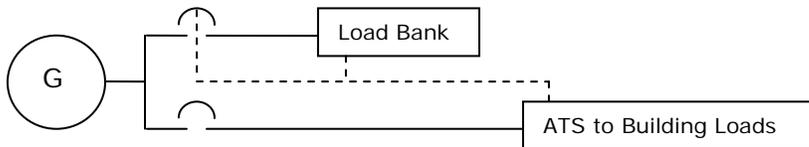
Load banks are used to provide an artificial load to on-site power generation equipment. A permanent load bank might be installed to avoid engine damage due to the lack of sufficient building loads during a project’s initial construction phase, or to provide loads to the generator during weekly exercising without disrupting building operations. Depending on the intended purpose for the load bank, it may be connected as follows:

- 1. Load bank is operated manually and is connected to the generator via a manual transfer switch.**



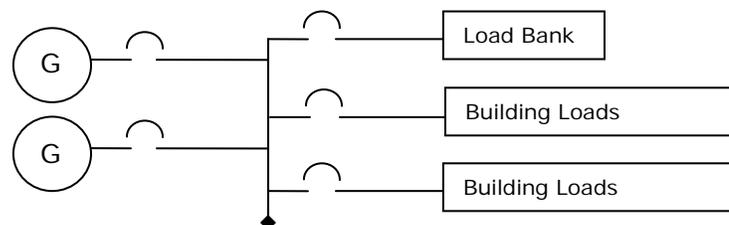
A manual transfer switch is used to connect the generator to the building loads (normal mode), or to the load bank. Facility personnel operate the manual transfer switch to connect the generator to the load bank for a scheduled test. When the switch is in the “load bank” position, the building does not have access to generator power.

- 2. Load bank operates automatically and is connected to the generator via a dedicated circuit breaker on the generator.**



The load bank is always connected and provides a load to the generator during automatic exercising events. Should the utility power fail during a load test event, a signal from the building’s automatic transfer switch (dashed line) acts as a disconnect signal for the load bank circuit breaker. The load bank is automatically turned off and its load is removed from the generator until manually reset.

- 3. Load bank is permanently connected to the generator (or generators in parallel as shown below) and operates automatically based on load sensing feature.**



The load bank is equipped with an automatic load leveling feature that allows it to sense the building loads and automatically regulate the load applied to the generator

by the load bank. This “active control” can be programmed so that the generator is always loaded to its optimal level, perhaps 80% of the generator's rated output. As the facility loads change, the load bank gradually increases or decreases its load to the generator. This configuration requires coordination of the load bank and the total generator capacity on site.

Note that a load bank connection should always have dedicated fault current protection so that the building loads are unaffected in the event of a fault within the load bank circuit. A generator circuit breaker should only be shared between building loads and the load bank when a manual transfer switch is in place to isolate the load bank. There are other considerations that must be reviewed to arrive at the best solution for a particular installation, but a broad range of available designs generally satisfy most requirements.

To learn more about load bank design and operation, please call Hurtado.cc.

Hurtado.cc represents Simplex, Inc - a manufacturer of various types of load banks for a wide range of applications.