

# SIMPLEX®

## WATT-MUNCHER



Portable Load Bank

This manual was last revised:

**June 8, 2021**

For up-to-date information on this product or others,  
please contact Simplex at 800-637-8603 or  
visit us on the web at [www.simplexdirect.com](http://www.simplexdirect.com).

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## I. WARNINGS AND CAUTIONS

### I-A. Safety Information Symbols:



This General warning symbol points out important information that, if not followed, could endanger personal safety and/or property.



This Explosion warning symbol points out potential explosion hazards.



This Fire warning symbol points out potential fire hazards.



This Electrical warning symbol points out potential electrical shock hazards.

### I-B. Cautions:

This load bank is high-powered, technical, industrial equipment operating at dangerous voltages and temperatures. It is capable of damaging itself, property or personnel if improperly used. It is not a consumer product.

It must be installed, connected and operated by personnel properly trained and experienced in its use. An operator's manual is supplied with each load bank and available online at [www. simplexdirect.com](http://www.simplexdirect.com). The operator must be familiar with its contents and have access to it during operation.

- **High Voltage:** Turn off and disconnect power source before opening this equipment
- **High Temperature:** Allow hardware to cool before servicing or opening this equipment.
- **Rotating Equipment:** Ensure that the fans have stopped before opening this unit.
- **For Operator Safety:** Make sure this equipment is properly grounded when in use.

All compression-type connections on fuse blocks, load blocks, and contactors should be checked for tightness frequently. This check should be established as part of routine maintenance.

The following cautions should be observed before and during operation:

- Check intake and exhaust screens as well as fan and load elements for foreign objects.
- Position and install the load bank with consideration given to large cubic airflow requirements, exhaust temperature, and velocity. Do not point exhaust at any nearby surface or object that may be adversely affected by high temperature. This includes but is not limited to painted surfaces, tar paper and asphalt roofs, water sprinkler heads, fire alarms, and volatile material.

- Do not use in confined spaces. The load bank may have to compete with cooling air requirements of a nearby running engine generator set where cooling air intake to a confined space may not be adequate for both engine and load bank. Be especially careful not to bounce hot exhaust air off nearby obstructions for re-circulation through the load bank.
- Verify that all control switch positions are set correctly for your intended usage before connecting the load bank to the source to be tested.
- The load cables carry high amperage. Be constantly aware of possibility of inductively heating adjacent ferrous objects to temperatures sufficient to damage cable insulation.
- Always connect the safety ground cable to a proper ground. Do not rely on a possible grounded neutral somewhere else in the system.
- Do not let the load bank run unattended for long periods of time.
- Do not store or operate in rain unless adequate protection is provided.
- Routinely inspect all components and electrical connections for tightness and integrity.
- Repair any damaged or degraded components and wiring without delay.
- If technical assistance, service, or parts are needed, please call 800-837-8603 (24 Hours).



- All hardware covered by this manual have dangerous electrical voltages and can cause fatal electrical shock. Avoid contact with bare wires, terminals, connections, etc. Ensure all appropriate covers, guards, grounds, and barriers are in place before operating the equipment. If work must be done around an operating unit, stand on an insulated dry surface to reduce the risk of electrocution.
- Do not handle any kind of electrical device while standing in water, while barefoot, or while your hands or feet are wet.
- If people must stand on metal or concrete while installing, servicing, adjusting, or repairing this equipment, place insulative mats over a dry wooden platform. Work on the equipment only while standing on such insulative mats.
- The National Electrical Code (NEC), Article 250 requires the frame to be connected to an approved earth ground and/or grounding rods. This grounding will help prevent dangerous electrical shock that might be caused by a ground fault condition or by static electricity. Never disconnect the ground wire while the load bank is in use.
- Wire gauge sizes of electrical wiring, cables, and cord sets must be adequate to handle the maximum electrical current (ampacity) to which they will be subjected.
- Before installing or servicing this (and related) equipment, ensure that all power voltage supplies are completely turned off at their source. Failure to do so can result in hazardous and possibly fatal electrical shock.
- In case of accident caused by electric shock, immediately shut down the source of electrical power. If this is not possible, attempt to free the victim from the live conductor. **AVOID DIRECT CONTACT WITH THE VICTIM.** Use a nonconducting implement, such as a dry rope or board, to free the victim from the live conductor. If the victim is unconscious, apply first aid and seek immediate medical attention.
- Never wear jewelry when working on this equipment. Jewelry can conduct electricity resulting in electric shock or may get caught in moving components causing injury.



- Keep a fire extinguisher near the hardware at all times. Do NOT use any carbon tetra-chloride type extinguisher. Its fumes are toxic, and the liquid can deteriorate wiring insulation. Keep the extinguisher properly charged and be familiar with its use. If there are any questions pertaining to fire extinguishers, please consult the local fire department.



- The illustrations in this manual are examples only and may differ from your load bank.
- Load Bank warranty is void if incorrectly cooled.

## II. DESCRIPTION AND SPECIFICATION

### II-A. Features

The Simplex Watt-Muncher is a small DC load bank used to test battery systems, AC-to-DC rectifiers and power supplies, battery chargers, UPS systems and DC generators. The Watt-Muncher provides a variable test load used to measure charge and discharge rates, response, stability and endurance. Corresponding calibrations and adjustments can be made while maintaining a constant, precise, resistive load on the power source.

### II-B. Safety

Watt-Munchers can be operated within their rating continuously. The load resistors used in the Watt-Muncher convection cool to less than one-third the maximum, continuous temperature rating of the chromium alloy resistance wire. Fuses on each load step protect the load bank against over-voltage and short circuit.

**II-C. Specifications**

<b>Capacity</b>	Junior: 70A Standard: 100A Super: 150A
<b>Power Factor</b>	1.0
<b>Load Type</b>	Resistive
<b>Cooling System</b>	Convection cooled
<b>Voltages</b>	12, 24, or 32V DC Frequency 60Hz standard, 50Hz option Connection Load cables
<b>Time Rating</b>	Continuous
<b>Ambient Air Temperature</b>	120°F
<b>Control Power</b>	Supplied by test under load
<b>Load Step Control</b>	Toggle switches
<b>Dimensions</b>	Junior: 22.85" W x 16.5" H x 14" D Standard: 22.85" W x 16.5" H x 14" D Super: 22.85" W x 16.5" H x 14" D
<b>Weight</b>	Junior: 30 lbs. Standard: 40 lbs. Super: 55 lbs.

### III. UNPACKING

#### III-A. Included Components and Parts

The following items are included with your load bank. If any of the following are not included, please contact Simplex Direct, Inc., at 800-637-8603.

1. Load bank
2. Manual
3. Electrical drawings package

#### III-B. Primary Inspection

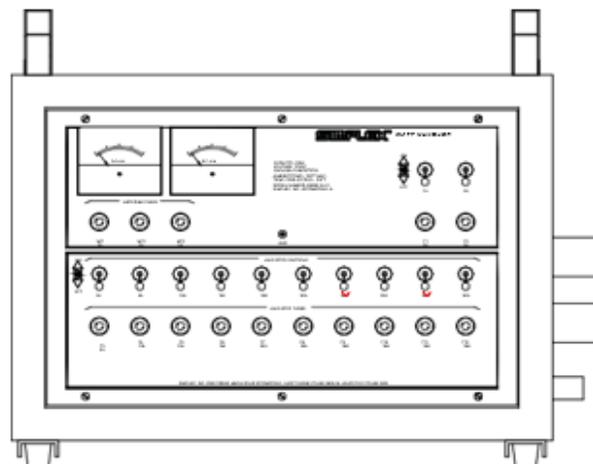
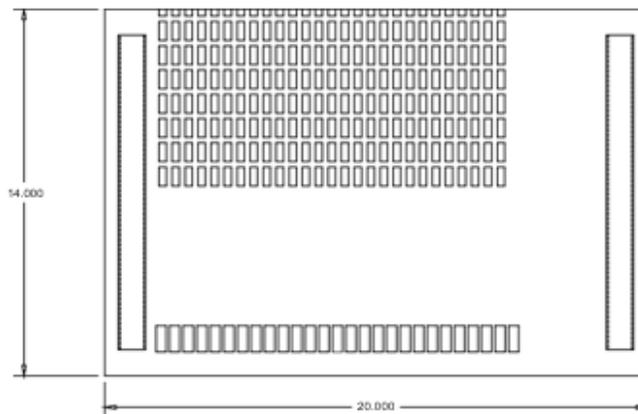
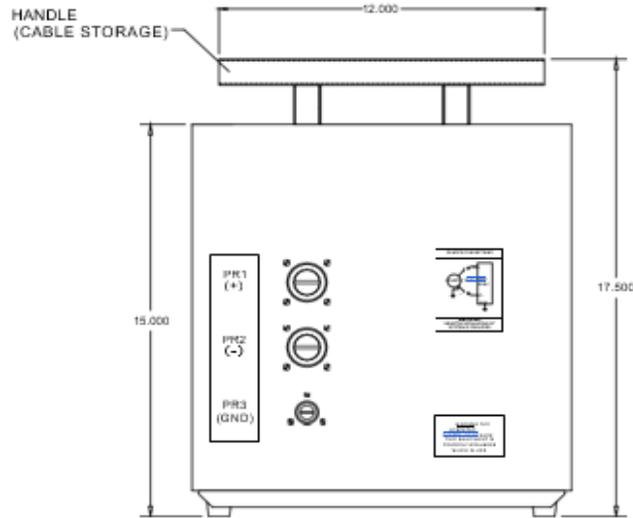
Preventative visual inspection of the shipping crate and the load bank is advised. Physical or electrical problems due to handling and vibration may occur. Never apply power to a load bank before performing this procedure. The following five-point inspection is recommended before installation and as part of a 6-month maintenance schedule or as a load bank is relocated:

1. If the crate shows any signs of damage, examine the load bank in the corresponding areas for signs of initial problems.
2. Check the entire outside of the cabinet for any visual damage, which could cause internal electrical or mechanical problems due to reduced clearance.
3. Inspect all relays and control modules. Make sure all components are secure in their bases and safety bails are in place. Spot check electrical connections for tightness. If any loose connections are found, inspect and tighten all remaining connections.
4. Examine all accessible internal electrical components such as fuses, contactors, and relays. Check lugged wires at these components.
5. Visually inspect the element chamber for foreign objects, broken ceramic insulators, and mechanical damage.



**Call Simplex if you have any problems during installation.  
24-hour contact at 800-637-8603**

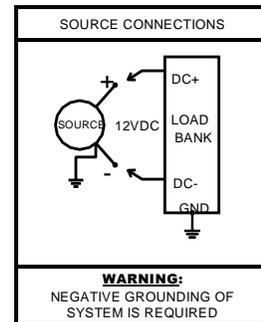
**III-C. Load Bank Dimensions and Features**



## IV. INSTALLATION

### IV-A. Load Bank Placement

Proper placement of the load bank is essential for the operators' safety and maintaining the integrity of the load bank. The load bank requires two feet of clearance on all sides. Avoid blocking the air inlets on the back and the bottom of the load bank and ensure the area around the load bank is clear of debris.



### IV-B. Wiring the Load Bank

Using the connection chart found on the side of the load bank, connect the source to be test to the load bank via the cam-style connectors.

## V. OPERATING INSTRUCTIONS

### V-A. Startup

Before operating the Watt-Muncher load bank, ensure that the unit is wired properly based on the instructions from “[Wiring the load bank](#)” on page 11.

1. When wired appropriately, the unit is ready to apply a load to a power source.
2. Turn on the power source.

### V-B. Applying a Load

1. Activate each load step by switching the desired step on.
2. Using the meters, you can monitor the voltage and amperage of the load.

### V-C. Shutdown

1. When your operation has completed, switch the load toggle switches to “Off.” This will remove the load from the unit.
2. Turn off the power source.
3. Disconnect the load bank from the power source.
4. The unit is now off and is ready to be moved down.

## VI. MAINTENANCE/TROUBLESHOOTING

### VI-A. General Maintenance

All electrical connections should be tightened every 6 months. Cooling fan motors are permanently lubricated and do not require maintenance.



**WARNING**

Remove all power before servicing the load bank.

### VI-B. Troubleshooting

These recommended checks are meant to guide an experienced technician through investigation of a few of the most common load bank issues. A certain level of electrical knowledge and familiarity with electrical drawings is assumed.

If these checks do not pinpoint the problem, or for more information about any of the recommendations, call the Simplex Service Department at 800-637-8603.

#### Load Bank wired to source but won't operate

- Ensure load bank is wired to source correctly. See [page 11](#) for more information about wiring your load bank to the source. Check fuses on front of load bank to ensure they aren't blown.
- Remove faceplate and check loose relays, contactors, lugged wires, etc. See [page 9](#) for more information about inspecting the load bank.

#### Load step won't activate

- Check fuses on front of load bank to ensure they aren't blown.
- Load element may be broken.



Contact Simplex  
for all your Load Bank and Fuel Supply needs.

Simplex, Inc.  
5300 Rising Moon Road  
Springfield, IL 62711

800-637-8603  
[www.simplexdirect.com](http://www.simplexdirect.com)

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