CATERPILLAR®

Resistive/Reactive Mobile Load Bank

2500 Total kV•A @ 480 VAC, .8 PF
2000 kV•A @ 480 VAC Resistive
1500 kV•AR @ 480 VAC Reactive

SPECIFICATIONS

Voltage . . . . . 480 VAC, 3-phase, 3-wire
Frequency . . . . . 60 Hz
Capacity . . . . . 2500 total kV•A @ 480 VAC, .8 PF
2000 kV•A @ 480 VAC resistive
1500 kV•AR @ 480 VAC reactive
Control Power . . . . . 120 VAC, 1 phase, 60 Hz
240 VAC, 1 phase, 60 Hz
External only
Fan Control Power . . . . . 480 VAC, 3-phase, 60 Hz
Maximum Intake
Air Temperature . . . . . 120° F
Maximum Exhaust Air
Temperature. . . . . Determined by exts setpoint
Airflow. . . . . 37 000 cfm per chamber
Duty Cycle . . . . . Continuous
Maximum Altitude . . . . . 3500 ft
Reactive Load Elements . . . . . Non-saturating air-gap calibrated iron core load inductors
Resistive Load Elements . . . . . Alloy: FeCrAl "powr-web" load resistor
Continuous temperature rating (in load bank). . . . . 1080° F
Cooldown time . . . . . 10 seconds
Load Element Protection Resistive branch circuits (protected by fuses rated at 200 000 AIC; 600 VAC)

CATERPILLAR FACILITIES ISO 9001 CERTIFIED

FEATURES

■ ENCLOSURE

The load bank system is housed in a modified 30-foot ISO NEMA 3R shipping container. Modifications include a cable access door and framing for the installation of three louvers. The enclosure includes a cable locker that provides 16, 75-foot lengths of lugged 535 MCM cable.

■ CONNECTIONS

Lugged cables from the test source are connected to the main bus bars in the load bank through an access door in the right side of the container. Control power can be provided from an external source instead of the test source.

■ OPERATION

The load bank is designed to apply a discrete, selectable resistive/reactive load to a power source. The operator can select and apply loads manually or via a computer. The desired load is entered at the keyboard in computer mode. The data is monitored by a G.E. Genius Power Trac® and displayed on the computer's monitor. The load bank includes a rack-mounted Gould TA 240® dual strip chart recorder that features thermal array recording, extensive annotation features, and true RMS voltage and frequency recording of the test source.

■ SAFETY

The load bank will remove the test source load when any condition is present which could damage the bank or present a safety hazard to the operator. These conditions include louver position, cooling failures (loss of cooling airflow, high intake, or high exhaust temperature), reactor overtemperature, and the position of the interior door.

■ LOUVERS & VENTILATION

The three load bank louvers are manually operated. As a safety feature, all louvers must be open to apply loads. The large forward louvers provide cooling air for the resistive section. The remaining louver provides interior ventilation.

■ COMPUTER CONTROL

Microsoft® Excel® software program loaded on IBM® 486 industrial grade on-board computer provides detailed, comprehensive graphics and tabular report writing capability for customer analysis of generator set performance and definition of repair/maintenance needs.

RESISTIVE/REACTIVE MOBILE LOAD BANK

Connections

Lugged cables from the test source are connected to the main bus bars in the load bank through an access door in the right side of the container. Control power can also be provided from an external power source. This has the advantage of keeping the control system energized while the generator is taken off line. External control power is connected through the cable access door via a 100A terminal strip connection.

Operational Features

The load bank is designed to apply a discrete, selectable resistive/reactive load to a power source. The operator may select and apply loads manually or via the computer. In the computer mode, the desired load can be entered and instantly applied via the touch-screen operation. In the manual mode, the desired load can be applied via the toggle switches. The load bank also features a Gould® strip chart recorder for recording frequency, current and voltage transients. The Gould® strip chart recorder is a thermal type recorder that allows annotation of the transient recordings.

****An on-line information system is available via the computer control.**

Safety Features

The load bank will remove the test source load when any condition is present which could damage the load bank or present a safety hazard to the operator. These conditions include louver position, cooling airflow failure, fan motor failure, bus overvoltage, and interior door position. System contains phase sequence detection so that fans always exhaust air in the proper direction.

Louvers and Ventilation

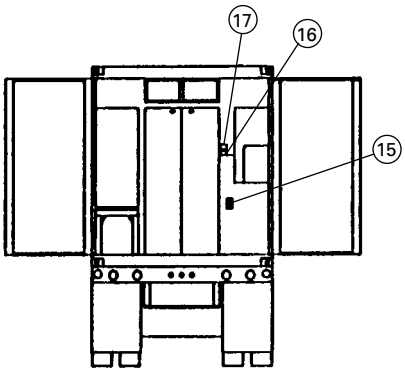
The resistive section exhaust louvers are manually operated. *The exhaust louvers must be manually opened to allow adequate cooling to the resistive section.* The intake louvers are driven by actuators and can be placed in an “auto” or “open” mode. The “auto” mode will open the intake louvers only when required.

Computer Controls

Industrial grade computer with touch-screen monitor. Monitors L-L voltage, L-N voltage, current, PF, kW, and kV•AR. Provides ability to enter desired kW, kV•AR, or PF and calculate correct load steps. Logs date to disk or print-out. Includes extensive onscreen help system.

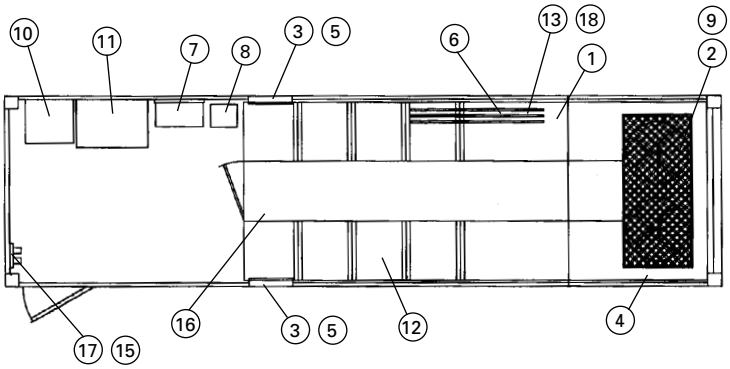
CATERPILLAR®

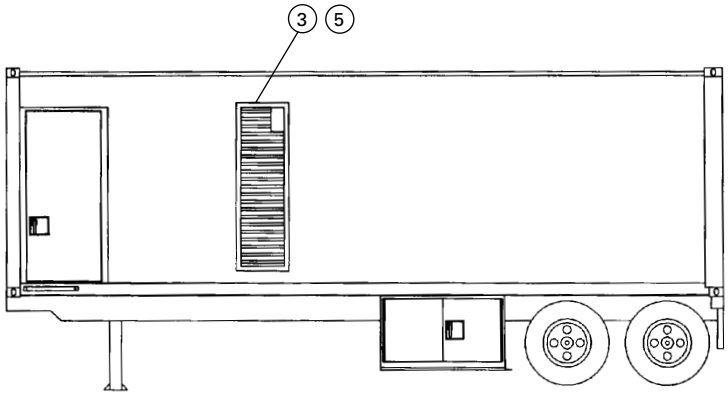
DIMENSIONS

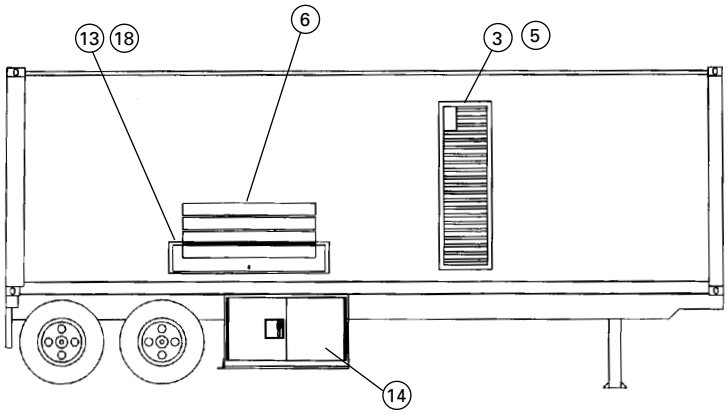


L		H		W		WGT	
cm	in	cm	in	cm	in	kg	lbs
935	368	401	158	243	96	15 890	35 000

NOTE: Restrict access within 50 ft. of resistive section exhaust louvers. All internal controls are powered from either the bus bars or the external power connection. If using bus bars for power, then loss of generator power will shut down the load bank.







1. Resistive load bank section
2. Fans (2) with 10 hp motor at 37 000 cfm
3. Resistive section intake louvers
4. Resistive section exhaust louvers (exhaust vectored down at 45°)
5. Inductive section intake louvers
6. Three-phase bus bars (load bank operational power supplied via bus bar or external outlet — item 18)
7. 480 VAC control panel
8. 480 VAC:120 VAC transformer (provides 120 VAC for controls and computer)
9. Inductive section exhaust fans (2)
10. Computer system/strip chart recorder
11. Main control panel
12. Inductive load sections
13. 240 VAC inlet receptacle for anti-condensation heaters
14. Storage for 535 MCM cable
15. 120 VAC outlet
16. Humidistat for anti-condensation heaters
17. Interior light switch
18. Terminal strip for 480 VAC external power

LEHX9145
Supersedes LEHX7302

Printed in U.S.A.