HILLSTONE PRODUCTS LTD.
Load Bank Instruction Manual

Hire Equipment type ref.

HPV 120

Doc ref. OMHPV120 issue 1

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SAFETY CONSIDERATIONS

1. The equipment is designed for use in a clean, dry, indoor environment and should only be operated by competent electrical engineers who are completely familiar with the operation and specification of the load bank.
2. The heavy duty lifting handles are provided on each side of the load bank and provides assistance when wheeling the load bank.
3. As with any electrical equipment the load bank should not be used in close proximity to recently charged batteries where a build up of explosive gases may have occurred.
4. Operators must ensure that interconnecting cables are correctly rated to carry the required load current and adequately insulated to prevent the possibility of electric shock when operating at high voltages.
5. When connecting the load bank to a battery , both cable connections should be made at the load bank terminals first. Connection to the battery terminals should always be last.
6. When in use the load bank should be cordon off using safety barriers.
7. The load bank should only be operated in an area with adequate ventilation.
8. Care should be taken as to the exhaust air outlet which may be hot.
9. Do not smoke in the proximity of batteries.
10. Operators working with batteries should not wear rings, jewellery or metal watch straps.
11. Only insulated tools should be used when working on power source connections.
12. Refer to Battery, UPS or the power source manufacturers operating instructions for additional safety precautions.
13. Ensure all personnel are familiar with the location of the nearest safety kit and eye wash facility.
14. During operation the load bank should not be covered or positioned to restrict air flow
15. Caution Metal surfaces will be hot during operation
16. Ensure fans are running at all times when the load bank is in operation
17. Leave the fans running for 5 minutes after the end of each test to allow the resistor elements to cool adequately.

CONNECTION INSTRUCTIONS

A. Ensure the battery to be tested is compatible with the load bank operating voltage range.
B. Do not attempt to operate the load bank above the maximum operating voltage.
C. Check the mains input and load bank master switches are in the off position.
D. Check the mains input selector switch is in the correct position.
E. Always connect the interconnecting cable at the load bank terminals before connecting to the battery.
F. Connect the load banks as per the connection diagram.
G. Ensure the interconnecting cable is adequately rated and correctly insulated to prevent any possibility of electric shock.
H. Connect the mains lead (provided) into the panel mounted IEC socket, using either 110V AC industrial plug or 240V AC as required.
I. Ensure the interconnecting cable connections are secure.

OPERATING INSTRUCTIONS

a) READ THE SAFETY CONSIDERATIONS.
b) Carry out the connection instructs above.
c) Ensure the load bank master switch is in the OFF position prior to start of testing
d) Ensure the sliders on the variable load banks are at the MAX OHMS- START POSITION
e) Ensure the load banks are connected as per the appropriate circuit connection diagram relating to the associated rating table.
f) Switch on the mains input switch and ensure the fans are running correctly.
g) Check the battery voltage is within the load bank rating before switching on the master control switch.
h) DO NOT EXCEED THE MAXIMUM VOLTAGE RATING OF LOAD BANK
i) Switch on the load bank master switch
j) Adjust the variable slider to maintain the required current during the test.
k) DO NOT ADJUST THE LOAD CURRENT ABOVE THE MAXIMUM RATING FOR THE SELECTED CIRCUIT CONFIGURATION – refer to *Equipment Rating Table* and *Typical Operating Parameters* (page 4) for guidance.

EQUIPMENT SPECIFICATION

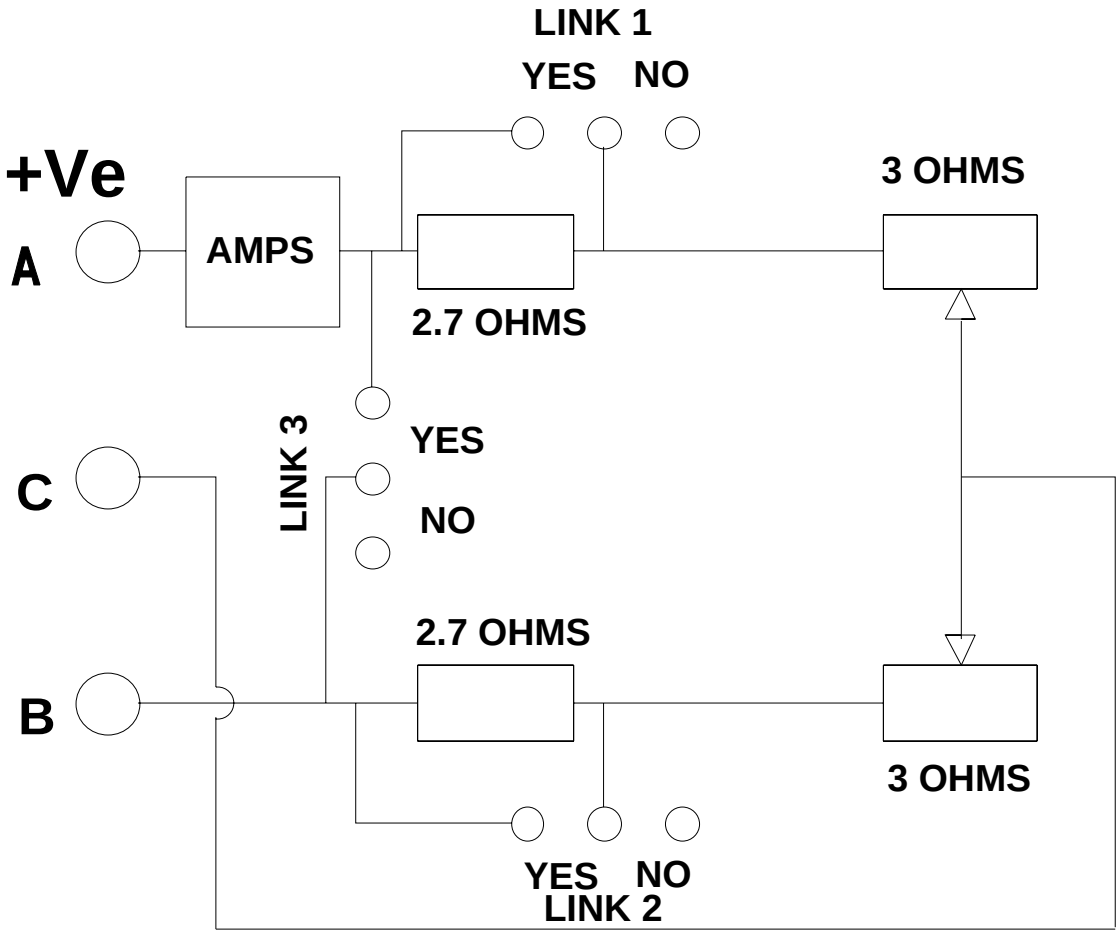
Equipment	type ref.	HPV120
Description		Portable resistive load bank with slider adjustment
Size		520 mm high x 690 mm long x 290 mm wide
Weight		35 Kgs

CONNECTION & RATING TABLE

Circuit Config.	Terminal Connections	Link 1	Link 2	Link 3	ohms range available	Max voltage	max. load current
1	A – B	No	No	No	11.4 to 5.4 ohms	228V	20A
2	A – B	Yes	No	No	8.7 to 2.7 ohms	174V	20A
3	A – B	Yes	Yes	No	6 to 0 ohms	120V	20A
4	A – C	No	No	Yes	2.85 to 1.35 ohms	114V	40A
5	A – C	Yes	Yes	Yes	1.5 to 0 ohms	60V	40A

Notes : Always connect battery positive to Terminal A

CIRCUIT DIAGRAM



HVP 120 - TYPICAL OPERATING PARAMETERS

24 volt nominal system (12 LA cells)

Circuit config.	Min start current (2.2 v.p.c)	Max current (1.8 v.p.c.)
1	2.3 amps	4 amps
2	3 amps	8 amps
3	4.4 amps	20 amps
4	9.3 amps	16 amps
5	17.6 amps	40 amps

30 volt nominal system (15 LA cells)

Circuit config.	Min start current (2.2 v.p.c)	Max current (1.8 v.p.c.)
1	2.9 amps	5 amps
2	3.8 amps	10 amps
3	5.5 amps	20 amps
4	11.6 amps	20 amps
5	22 amps	40 amps

48 volt nominal system (24 LA cells)

Circuit config.	Min start current (2.2 v.p.c)	Max current (1.8 v.p.c.)
1	4.6 amps	8 amps
2	6.1 amps	16 amps
3	8.8 amps	20 amps
4	18.5 amps	32 amps
5	35.2 amps	40 amps

110 volt nominal system (55 LA cells)

Circuit config.	Min start current (2.2 v.p.c)	Max current (1.8 v.p.c.)
1	10.6 amps	18 amps
2	13.9 amps	20 amps
3	20.2 amps	20 amps
4	Not suitable	Not suitable
5	Not suitable	Not suitable

120 volt nominal system (60 LA cells)

Circuit config.	Min start current (2.2 v.p.c)	Max current (1.8 v.p.c.)
1	11.6 amps	20 amps
2	15.2 amps	20 amps
3	Not suitable	Not suitable
4	Not suitable	Not suitable
5	Not suitable	Not suitable