BASEWEST

Operating & Maintenance Manual

Battery Power Units, Escape Slide Lighting Systems

Model 725 thru 785

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BASEWEST INC.
4240 116th Terrace N • Clearwater FL 33762
Tel: 727/573-2700 • Fax: 727/573-4307
E-mail: info@basewest.com
www.basewest.com

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1.0 INTRODUCTION

1.1 This manual covers the general configuration, installation, operation, test, and maintenance of Model 700-Series escape slide lighting battery power units (Models 725 through 785) manufactured by BaseWest Inc. These batteries are the basic, non-rechargeable, non-regulated versions designed to power incandescent lighting harnesses on aircraft inflatable evacuation slides and slide/rafts. BaseWest Operating & Maintenance Manual 25-60-53 covers the Model 790-Series IC-regulated “smart” batteries which are used on LED-based escape slide lighting systems. For specific instructions relative to operation and installation on a specific escape slide, please refer to the corresponding OEM escape slide or slide/raft manual.

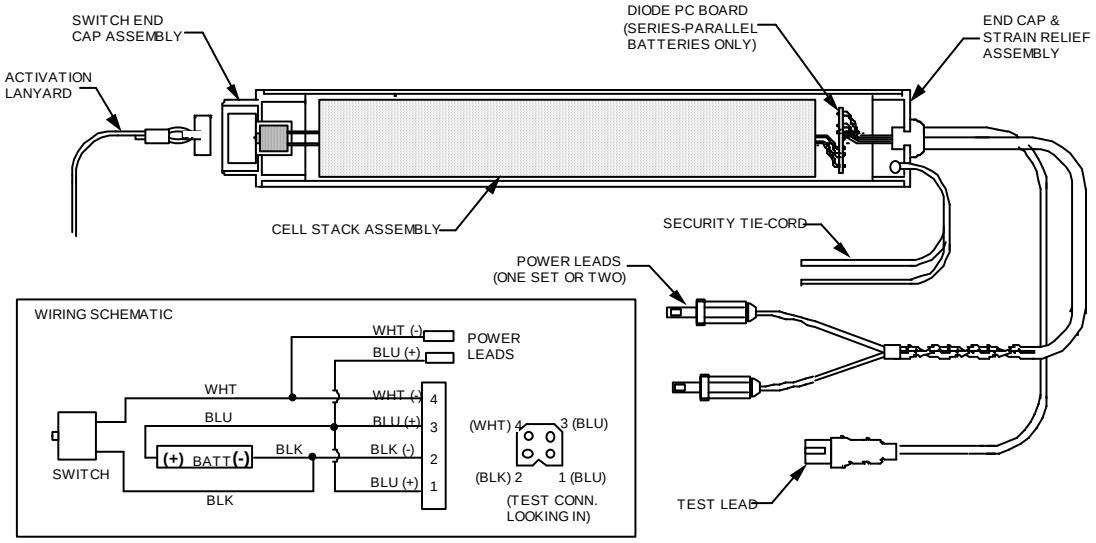
1.2 BaseWest's Model 700-Series batteries are FAA/PMA and/or OEM-approved for use with original equipment escape slide lighting system, and are fully interchangeable with original equipment batteries. These units are fully compatible with the DME/Astronics TU-14 test set, as well as BaseWest’s OEM-approved TS-420 test set. Test instructions provided in OEM manuals are applicable to all BaseWest Model 700-Series batteries.

Figure 1 - Typical Model 700-Series Batteries

2.0 DESCRIPTION

2.1 General Configuration

BaseWest's Model 700-Series batteries are non-rechargeable, non-regulated DC battery packs configured in a cylindrical package of polycarbonate material. Power and test leads are provided at one end of the battery pack and the activation switching means at the other. Switching is accomplished with a miniature snap-acting microswitch. The internal and external wiring conforms to mil-standard M16878/E (multi-stranded, TFE insulated).The size, weight, and configuration of power and test leads vary with the model number. A representative configuration of the basic Model 700-Series batteries is shown in Figure 2 below.



Model	Cell Type (Number & Configuration)	Power Lead Sets	Nominal Length & Diameter
725	AAA (35, series-parallel)	1	10.75 x 1.65 Dia
730	C (6 in series)	2	13.75 x 1.28 Dia
735	C (6 in series)	2	13.75 x 1.28 Dia
740	C (6 in series)	2	13.75 x 1.28 Dia
745	AAA (20, series-parallel)	1	9.00 x 1.28 Dia
750	AAA (14, series-parallel)	1	7.70 x 1.28 Dia
755	C (6 in series)	1	13.75 x 1.28 Dia
760	C (6 in series)	1	13.75 x 1.28 Dia
765	C (7 in series)	2	15.57 x 1.28 Dia
770	AA (28, series-parallel)	1	10.56 x 2.0 Dia
771	AA (28, series-parallel)	2	10.56 x 2.0 Dia
775	C (5 in series)	2	11.5 x 1.28 Dia
780	C (7 in series)	2	15.5 x 1.28 Dia
785	C (6 in series)	2	13.75 x 1.28 Dia

Figure 2 – General Configuration - Model 725 through 785

2.2 Battery Cell Type

BaseWest's Model 700-Series batteries are based on standard “AAA”, “AA”, or “C” size non-rechargeable Energizer® alkaline-manganese dioxide cells. The number of cells, size, and series and/or series-parallel arrangements vary with the model number according to the chart in Figure 2. These types of cells are not considered hazardous materials for transport or disposal and contain no mercury. Energizer technical information regarding these cells including the Product Safety Data Sheets, and the “Alkaline Manganese Dioxide Battery Handbook and Application Manual” which includes transport and disposal guidelines can be found the following link.

- https://data.energizer.com/pdfs/alkaline_appman.pdf

2.3 Theory of Operation

Battery activation and illumination of the escape slide lighting system is accomplished automatically upon inflation of the host device. An activation lanyard with a switch plug snaps into a retention clip which is part of the battery’s switch end assembly. The switch plug, when properly seated in the retention clip, depresses the plunger of the snap-action microswitch, rendering the battery power circuit open, and the system off. The lanyard is short-rigged and tied-off, so that inflation and extension of the escape slide causes the switch plug to be pulled from its retention clip, allowing the microswitch to snap to the closed circuit condition, providing power to the slide light assembly.

3.0 INSTALLATION, RIGGING and OPERATION

3.1 Installation & Rigging

Install the Model 700-series battery pack in accordance with escape slide manufacturer's component maintenance manual procedures. Secure the end of the activation lanyard to the escape slide structure and route it to the battery pack in accordance with the escape slide manufacturer's CMM. Fully install the switch plug (located on the end of the activation lanyard) into the clip in the switch end of the battery pack per Figure 3. Do not safety-tie or otherwise obstruct free release of the switch plug from its retention clip.

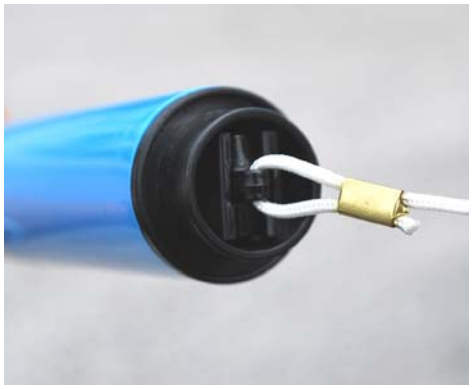


Figure 3 - Installation of Activation Switch Plug

3.2 Packing

Care must be taken during the packing process to ensure that sufficient slack is available in the activation lanyard to ensure that folding, packing, and compression will not inadvertently place sufficient tension on the activation lanyard to cause it to pull from the retaining clip in the end of the battery; such a condition will result in inadvertent activation of the lighting system and premature depletion of the battery pack.

Further care must be taken to avoid placing the battery in a location that will result in bending stresses, or point load compression against hard surfaces (e.g., bottles or regulators) within the pack that could compromise the battery pack.

3.3 Operation

The battery pack, when properly installed, secured and rigged in accordance with the escape slide manufacturer's instructions, will operate automatically upon inflation of the escape slide. The activation lanyard is "short-rigged" to the escape slide such that the activation switch plug will be pulled from the battery when the escape slide is inflated.

3.4 Special Activation Lanyards

Some OEM battery installations call out special activation lanyards - including those with integral attachment loops, dual activation devices, and DOT fasteners. BaseWest maintains TSO C69b authority to allow use of corresponding replacement BaseWest special lanyards designed to interface with BaseWest's unique battery activation design. Please contact BaseWest for any special activation lanyard requirements.

4.0 TESTING

4.1 General

4.1.1 BaseWest escape slide light systems are designed to be tested with BaseWest's Model TS-420 test set or functionally equivalent test units such DME/Astronics Model TU-12 and TU-14. OEM test instructions which call out instructions for testing OEM batteries with the Models TU-12 or TU-14 are directly applicable to BaseWest Model 700-Series batteries and the BaseWest Model TS-420 test set. Published GO-NO GO test values are also directly applicable.

Figure 4 – Battery Testing with TS-420 Test Set

4.1.2 This section applies, generally, to an individual battery, either installed on a slide or uninstalled. The procedures in this section assume that the battery is testing independently, and that it is not attached to slide light harness. This test is suitable for receiving inspection, pre-installation or pre-packing test.

4.2 Battery Condition Test

This test is designed to verify the condition of the internal battery cells under test load, only. A functional test of the battery is provided in the next section.

(a) Identify the part number of the battery to be tested (and its OEM cross-reference, if applicable). Determine the applicable test load settings and GO-NO GO criteria as published in the applicable OEM maintenance manual.

(b) Gain access to the battery's 4-contact test connector, as shown in Figure 4, and plug it into the corresponding receptacle on the TS-420 test set (or equivalent).

(c) With switch plug INSTALLED, place the test set in the "VOLTMETER" or battery test mode. Set the LOAD SELECTOR rotary switch to the proper position ("A" through "F" or "NO LOAD"), as called out in the OEM maintenance manual.

(d) Press the test set switch and record voltage within 2-3 seconds. Release test switch.

4.3 Battery Functional Test

This section covers functional testing of the Model 700-Series battery connected to a slide lighting harness before repacking of the slide. DO NOT PERFORM THIS PROCEDURE WITH TEST SET CONNECTED TO THE BATTERY.

a) Install the battery, rig the activation lanyard, and connect it to the slide light harness in accordance with slide manufacturer instructions and Section 2.0 of this manual.

b) With the escape slide laid out fully and all slide light luminaires visible (inflated or non-inflated), pull the activation switch plug from the battery. Observe that the slide lights function properly. IMMEDIATELY reinstall the switch plug to deactivate the battery.

CAUTION: OPERATION OF THE LIGHTING HARNESS WITH THE INSTALLED BATTERY WILL DEPLETE THE BATTERY.

CAUTION: DO NOT REMOVE CONNECTOR HOUSINGS OR CONTACT INSULATORS FROM THE POWER LEADS EXCEPT AS NECESSARY TO CONNECT THE BATTERY TO THE LIGHTING HARNESS. DO NOT ALLOW THE BARE CONNECTOR CONTACTS TO TOUCH; THIS WILL CAUSE A MOMENTARY SHORT CIRCUIT AND CAN REDUCE BATTERY CAPACITY SIGNIFICANTLY.

5.0 MAINTENANCE

5.1 General

BaseWest's Model 700-Series batteries are non-repairable, non-rotable items that have a limited service life of five (5) years from date of manufacture. Repairs are not authorized. Do not recharge.

5.2 Storage

The Model 700-Series batteries should be stored in a dry, temperature-controlled area at nominal room temperature or cooler. They should remain in their primary unit packing until pulled from stock for use. Do not expose the power lead contacts to contact with conductive materials, or to contact with each other. Maintain the switch plug fully seated and connector housings and/or insulation sleeves on power lead contacts at all times.

5.3 Service Life

The Model 700-Series batteries are FAA-approved for a five (5) year service life; both the manufacture date and replace-by date are marked on the battery nameplate.

5.4 Transportation & Disposal

For information relating to transportation and disposal, please refer to the Energizer documentation provided in the internet links in Section 2.2.