



## **BUBBLEPACK**

65W UNIVERSAL BATTERY PACK

# **OPERATING INSTRUCTIONS**

Revision 1.0



The user is being alerted of the importance of going through the literature accompanying this product and getting familiarised with the important safety and operating instructions, included.

**Moreover, please follow the safety instructions below.**

- Read the supplied instructions thoroughly and keep handy.
- Protect the equipment from humid environments. Avoid any contact with water or other fluids. Do not use if any liquid has been accidentally spilled inside the equipment.
- Unplug when not in use and avoid careless overload or short circuits.
- Unplug and switch off the charger if not in use.
- It is recommended to send the unit to sleep mode when not in use to avoid self-discharge.
- Avoid allowing the battery discharge to extremely low levels. It is recommended to charge it periodically to a reasonable level (say 50% or 3 LEDs) even when not in use.
- Avoid setting up near extreme heat sources such as in scorching sunshine, fire places, radiators, stoves or other heat generating equipment
- Do not remove cover or dismantle the apparatus. No user-serviceable parts inside
- Use only as instructed by the manufacturer. If the equipment develops a fault, have it repaired by qualified service personnel only
- **The equipment probably may become rather warm or even hot during operation. This is not a sign of malfunction since this equipment is designed and tested to withstand this. All this is to be expected due to the high power handling of the device within such a small volume.**

## Package contents

- Bubblepack 65Wh battery
- Camera Adapter base
- Battery charger with mains cable
- BSTAP connector with 50cm cable
- Operating manual

## Introduction

Bubblepack is a universal 65Wh, battery pack with multiple voltage outputs.

The device is intended for fixing underneath a camera to supply power to it and its accessories. The whole arrangement can also be mounted on a tripod if needed.

Outputs	Range	Connection	Designation
14.8V /7A max	12.6V min ~ 16.8V max	2 x D-TAP	<b>HIGH</b>
11.2V /5A max	selected by switch	2 x BSTAP*	<b>LOW</b>
8.4V /5A max	selected by switch	2 x BSTAP*	<b>LOW</b>

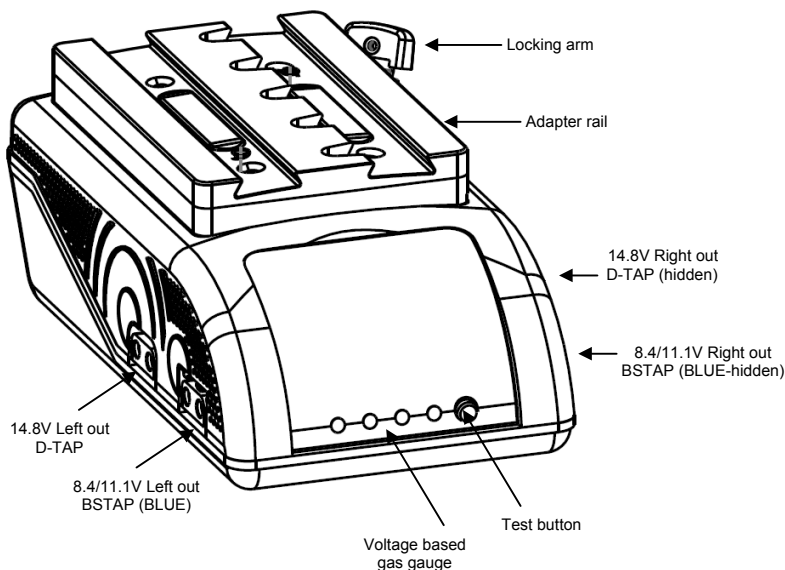
All **LOW** outputs are regulated  
\*BSTAP is a custom BLUESHAPE connector (blue)

## Features

- Sturdy mechanical design
- Detachable (sliding) adapter with spring loaded, dual hooking mechanism
- Lever arm for tight, low tolerance locking of adapter base to rail, ensuring shake-free operation during shooting
- Adjustable positioning of adapter base on rail for achievement of optimum camera balance
- Super compact, high energy density and lightweight assembly
- Stylish external looks
- Can be mounted on a standard tripod
- Choice of 3 voltage outputs @ high current
- Choice of 4 output connectors (2 x D-TAP, 2 x BSTAP)
- Comprehensive electrical safety/ energy saving features
- Full short-circuit /overload protection
- Convenient, 4 LED voltage based gas gauge
- High efficiency Li-ion battery charger included
- Can power a wide range of cameras using special accessories (available extra) such as cables and battery eliminators. Please visit [www.blueshape.net](http://www.blueshape.net) for more information.

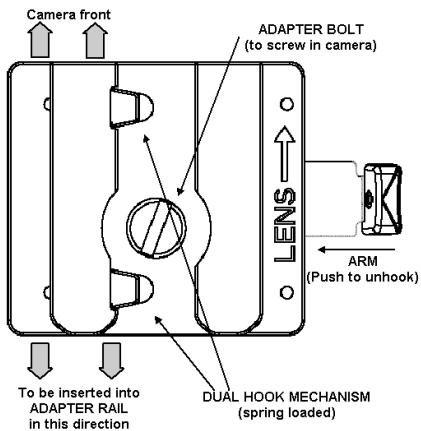
## Bubblepack graphic description

(Battery)



(Adapter base)

*not to scale*



## Principle of operation

Bubblepack internally contains 8 high quality Li-ion battery cells that can deliver a total of 65Wh. A battery management system and a high efficiency step-down converter create a choice of 3 voltage outputs - those most widely used in today's latest miniDV and DSC cameras:

- 14.8V nominal
- 11.2V regulated and fixed
- 8.4V regulated and fixed

The safety circuit features the usual, over and under voltage battery protections together with full output short circuit protections.

## How to check the state of charge

A 4-stage voltage-based gas gauge gives a rough indication of the remaining capacity. The LED display is activated by the push button switch on the front. The LED array displays the state of charge based on the following criteria:

Voltage	Approx. state of charge	LEDs
> 15.85V	100% ~ 80%	4 LEDs on
15.85V ~ 15.63V	80% ~ 60%	3 LEDs on
15.63V ~ 15.00V	60% ~ 40%	2 LEDs on
15.00V ~ 14.60V	40% ~ 20%	1 LED on
< 14.35V	<20%	1 LED flashing

## Auto turn-off modes

Further features include 'sleep mode' to minimise battery drain during inactivity and when the battery pack reaches a low voltage threshold of 12.6V. In 'sleep mode', the internal microprocessor goes to low power mode thus minimising battery consumption.

The battery can go to sleep mode in 3 ways:

- automatically, if pack voltage is  $< 12.6V$
- if there is no activity for 60 minutes
- if the test button is pressed for  $> 3$  seconds until the LED closest to the push button flashes. Note that Bubblepack can still power applications during sleep

## Wake-up

To wake up Bubblepack from sleep, just press the (test) push button until the LEDs flash. The number of LEDs that will flash is in accordance with the residual capacity of the pack at that time.

## Short Circuit protection

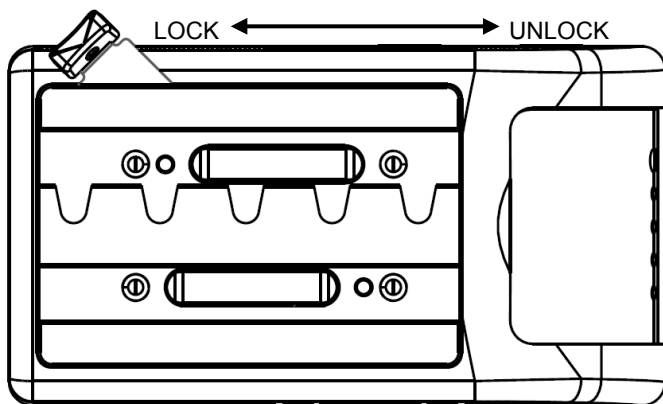
In the event of a short circuit on the **HIGH** side, all 4 LEDs will flash. The reset procedure is to press the test button so as to open the relay. Following this, the LEDs flash in sequence and reactivate the relay/power. If the short still persists, the same events will occur. When the short is removed, Bubblepack will resume normal operation. A second pressing of the test button will return a gas gauge result.

## How to charge Bubblepack

A fast charger has been included in the package.

Simply connect the charger to one of the **HIGH** outputs on Bubblepack and the device will charge. It is expected that the device reaches full charge from empty within 2 ~ 3 hours. The LED on the charger will be red during charging but will turn to green when charge is completed. It is recommended to charge Bubblepack on first use or after a long period of shelf life or inactivity.

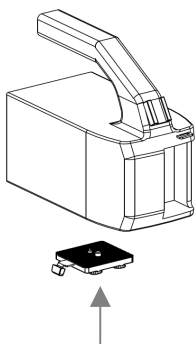
## Purpose of the locking arm



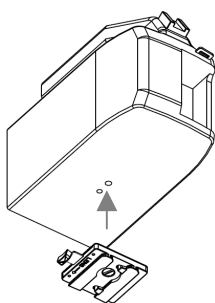
The adapter base is designed to slide with ease into the corresponding rail profile on the battery. This enables the user to determine the best 'notch position' for optimum balance.

It is of vital importance that camera shake is not present during shooting when the camera and Bubblepack are mounted on a tripod, The arm mechanism on Bubblepack locks the base with the battery to unite and tighten the combination and reduce mechanical clearances (and therefore, overall shake), to a negligible amount .

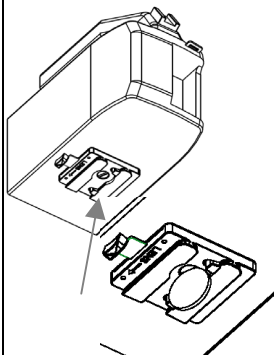
## How to mount the camera



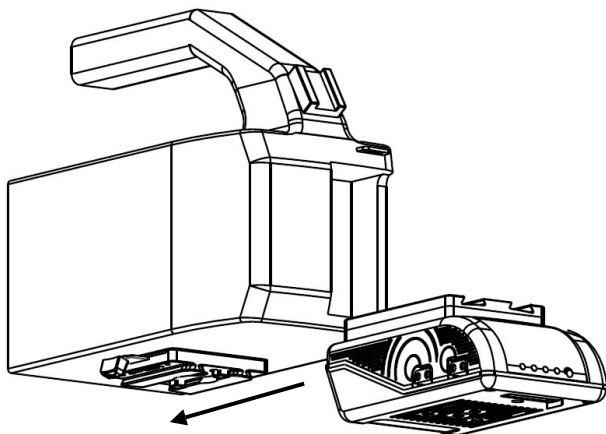
1. Position adapter base underneath the camera



2. View showing camera thread and alignment hole



3. Use a coin to screw in the adapter bolt into the camera



Slide battery in this direction  
and determine the best lock-notch for best equilibrium

4. Slide battery into adapter base as shown and lock the arm after finding the best notch that gives the best balance



## Technical specifications

Internal battery:	
Cell type	Li-Ion cylindrical rechargeable battery cells
Nominal voltage - <b>HIGH</b>	14.8V (range 12.6 - 16.8V)
Regulated Voltage - <b>LOW</b> (1)	11.2V +/- 2%
Regulated voltage - <b>LOW</b> (2)	8.4V +/- 2%
Nominal capacity	4.4Ah – 65Wh
Max. discharge current (D-TAP)	7A +/- 2%
Max. discharge current (BSTAP)	5A +/- 2%
Max output ripple content	<50mV
Operating temperature range	-10°C ~ +60°C (+14°F ~ +140°F)
Storage temperature range	0°C ~ +35°C (32°F ~ 95°F)
Dimensions	139 x 76 x 53mm (excluding adapter base)
Weight - Battery only	743g
Weight - Battery & adapter base	819g
Charger	
Type	Li-ion 16.8V 3A 100 ~ 240V AC/ 50 ~ 60Hz

At our own responsibility we declare that this product is CE certified.

## **Warranty**

BLUESHAPE Bubblepack is warranted to be free from defects in materials, workmanship and functionality for a period of 18 months commencing from the date of purchase.

This warranty shall not apply to any products or parts of, that have been subjected to misuse, negligence, accidental or abnormal conditions of operation.

The buyer should always contact the place of purchase for any return of defective product. It is important that the buyer provides us with as much information as possible about the failure being claimed.

In the event of product failure for which warranty applies, we will repair or replace the product free of charge. In these cases, all expenses including transport charges will be borne by us.

In the case where the failure has been caused by one of the causes explained above, repairs should be billed at a nominal cost. Prior to the carrying out of any repairs, we will inform the customer of the estimated costs of these repairs.

These warranty conditions are the only ones applicable to our products and overrule any other expressed or implied warranties. We shall not be held liable for any damages resulting from warranty statements other than those contained in this declaration.

In all warranty claims, the buyer must reproduce the original purchase invoice.



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