

# PAG ZL-150 Batteries

## Instruction Leaflet

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## Safety

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**1.1** When used correctly, Nickel-Metal Hydride batteries are a rugged, safe, clean and trouble-free means of storing power. Offering a high energy density, the cells do not deteriorate when left in a discharged state, making them ideally suited to applications where reliable portable power is required. However, the user should be aware that incorrect use could present a hazard. In the interest of safety, and the protection of our environment, please read and observe the following health and safety information.

**1.2 GENERAL:** Do not put in fire or mutilate. Cells may burst or release toxic material. Do not short-circuit as this may cause burns.

**1.3 CORROSIVE ELECTROLYTE:** The electrolyte is a mixture of potassium-hydroxide (KOH) and water. This can cause chemical burns to human tissue, should leakage occur. Wear protective gloves when handling all contaminated materials.

In the event of contact with the skin, flood copiously with clean water. If significant amounts of electrolyte are in involved, or if any has touched the eyes, seek medical attention immediately.

**1.4 ACCIDENTAL SHORT-CIRCUITING:** Nickel-Metal Hydride cells can deliver power at very high rates. PAG batteries are protected at their output connections by self-resetting overload protection devices, but severe mechanical abuse of a battery could result in damage to cells, and short-circuit internal to the battery. Arcing, excessive heat and the liberation of combustible gas could result, with the potential for personal injury or ignition of adjacent flammable materials.

**1.5 DISPOSAL:** Expired Nickel-Metal Hydride batteries are classified as controlled waste, and must be disposed of in accordance with the appropriate regulations or legislation. PAG Ltd offers a recycling service for expired PAG batteries, which results in the materials being recovered for re-use.

**WARNING:** Do not mutilate or incinerate batteries. Do not dispose of batteries or cells in a charged condition (see 1.4 above).

Return batteries by prior arrangement to:  
PAG Ltd. 565 Kingston Road, London SW20 8SA.  
Tel: +44 (0) 20 8543 3131, Fax: +44 (0)20 8540 4797.  
E-mail: sales@paguk.com.

Batteries must be in a discharged state, and be clearly marked "FOR RECYCLING".

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## Specification

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### 2.1 Description:

**Model No. 9316 PAG ZL-150 Battery.**  
Compatible with the PAGlok battery connector system.

### Model No. 9316V PAG ZL-150 Battery.

Compatible with the Sony V-Mount battery connector system.

### 2.2 Construction:

PAG ZL-150 batteries have welded cell interconnections of low-resistance nickel strap. The case for these models consists of high-impact injection mouldings with an internal cradle feature designed to protect the cells from impact damage. The batteries are sealed and non user-serviceable.

### 2.3 Cells:

Premium grade Nickel-Metal Hydride sealed rechargeable cylindrical cells.

### 2.4 Voltage:

14.4V Nominal (12 cells connected in series, nominal voltage 1.2V per cell).

### 2.5 Capacity:

10 ampere-hours, nominal.

### 2.6 Output Protection:

The ZL-150 battery is protected against short circuit and excessive currents by means of a self-resetting protection device. Rated maximum continuous output current is 8 amperes. Batteries are protected against over-temperature by means of a self-resetting thermal trip rated 71°C.

### 2.7 Operating Temperature Range:

Optimum discharge efficiency is achieved within the temperature range 0°C to +40°C.

### 2.8 Weight:

2.35kg (5.2lb) approx.

### 2.9 Size (H x W x D):

PAGlok Model 9316  
208 x 125 x 44mm (excluding PAGlok claws).

V-Mount Model 9316V  
208 x 125 x 52mm.

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## Care & Maintenance

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**3.1** The batteries can be stored for up to one year without significant loss of cell life. For optimal long-term storage, batteries should be in the 50% charged state.

**3.2** Maintenance charging is not required during long-term storage.

**3.3** Store in a cool, dry place at a temperature between -20°C and +30°C. Long-term storage at temperatures above +30°C will reduce the battery's life because of deterioration of organic materials such as the gasket and separator. Excessively low storage temperatures (below -20°C) are also to be avoided since the electrolyte may freeze, resulting in permanent cell damage.

**3.4** After prolonged storage, it is not ideal to fast-charge the battery immediately. The cells should first be re-formed and balanced by giving the battery a slow (C/10) charge for 16

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hours. When the battery is subsequently put into service, 2 or 3 cycles of charge and discharge may be required to return the battery to its maximum available capacity.

Users with AR Series chargers may find the following procedure beneficial: Charge the battery until the charger indicates that it is charged. Disconnect the battery from the charger, and then re-apply it, using the 'Recovery' program. Allow this program to run until the charger again indicates that the battery is charged.

- 3.5 The battery should be in a fully charged state before use. Even after one week in storage, it is advisable to give the battery a top-up charge before use.
- 3.6 Use only the recommended chargers (see Section 4.1.3 below).
- 3.7 For maximum output, use within the temperature range 0°C to +30°C. Never operate outside of the temperature range -20°C to +45°C.
- 3.8 The battery is designed for a maximum continuous output of 10 amperes. Battery output is protected by means of a self-resetting over-current protection device. The device has a time/current characteristic which will allow surge currents up to 15 amperes to flow, but will trip if a continuous current exceeding 12 amperes is drawn. The batteries are protected against over-temperature by means of a self-resetting thermal trip rated 71°C.
- 3.9 The battery is sealed, and contains no user-serviceable components. In order to maintain the quality standard for which you first chose this product, return it to a PAG Dealer or the PAG Service Department for servicing.

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## Instructions for Use

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### 4.1 Charging Instructions

- 4.1.1 The battery should be in a fully charged state before use. Even after one week in storage it is advisable to give it a top-up charge before use.
- 4.1.2 The battery should be charged only from a PAG ACS charger. Other types of charger may not be suitable, and could damage the battery irreparably.
- 4.1.3 Suitable chargers for the PAGlok ZL-150 battery are the PAG AR124PLD (Model 9792), the PAG Quasar (Models 9726 and 9752), and the PAG Freelancer (Model 9613). These chargers are equipped with PAGlok connectors, which allow the batteries to be connected directly to the charger, without the use of loose connecting leads. The chargers

incorporate PAG ACS, a unique microcomputer control system that enables these chargers to fast-charge any reputable make of battery safely, while significantly extending its working life.

Suitable chargers for the V-Mount ZL-150 battery are the PAG V4-iPC (Model 9700V) and the PAG V2 (Model 9613V). These chargers are equipped with V-Mount connectors, which allow the batteries to be connected directly to the charger, without the use of loose connecting leads. The chargers can fast-charge PAG V-Mount batteries safely, while significantly extending their working life.

- 4.1.4 When a battery has been discharged at a high current it will become warm, and it is advisable to let it cool before charging it. For the best results the battery should be charged within the temperature range +10°C to +40°C.

### 4.2 Charge Status Indication:

PAG ZL-150 batteries incorporate a manual 'Charged/Used' Indicator, mounted to the rear of the battery pack.

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## Warranty

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- 5.1 Notwithstanding any provision of any agreement the following Warranty is exclusive: PAG Limited warrants each PAG ZL-150 battery it manufactures to be free of defects in material and workmanship under normal use and service for **18 MONTHS** from the date of purchase. This warranty extends only to the original purchaser. This warranty shall not apply to fuses or any product or parts which have been subject to misuse, neglect, accident or abnormal conditions of operation.
- 5.2 In the event of failure of a product covered by this warranty, PAG Limited will repair and calibrate equipment returned to an authorised Service Facility within the period of the warranty, provided the warrantor's examination discloses to its satisfaction the product was defective. The warrantor may, at its option, replace the product in lieu of repair. With regard to any equipment returned within this period, said repairs or replacements will be made without charge. If the failure has been caused by misuse, neglect, accident or abnormal conditions of operation, repairs will be billed at a nominal cost. In such a case, an estimate will be submitted before work is started, if requested.
- 5.3 The foregoing Warranty is in lieu of all other warranties, express or implied, including but not limited to any implied warranty or merchantability, fitness or adequacy for any particular purpose or use. PAG Limited shall not be liable for any special, incidental, or consequential damages, whether in contract, tort, or otherwise.