DCF

Damage Control Floodlantern

Without Compromise

NSN 6230 99 148 5086

INSTRUCTION & MAINTENANCE MANUAL

WARNING

This manual, including the warnings and cautions inside, must be read and followed carefully by all persons who use or maintain this product, including those who have any responsibility involving its selection, application, service, or repair. This lamp system will perform as designed only if used and maintained according to these instructions, otherwise it could fail to perform as designed and persons who rely on this product could sustain serious personal injury or death.

DenchiGroup

Maintenance Manual for
Damage Control Floodlantern
NATO stock code: - 6230-99-148-5086
(previous models recognised under NSN 6230-99-251-7785)

Part number 207000 (M263651)

General Description:

The Damage Control Floodlantern (DCF) consists of a coated aluminium battery box containing 2 x L16 mining caplamp batteries. Attached to this is an austenitic stainless-steel lamp top that houses a 4-volt, 16 watt, 35mm halogen dichroic bulb reflector assembly. The light can be directed by use of the control lever positioned directly under the handle.
A push button switch is used to power up the lantern, which has an operating duration of 6 hours when the battery is fully charged.

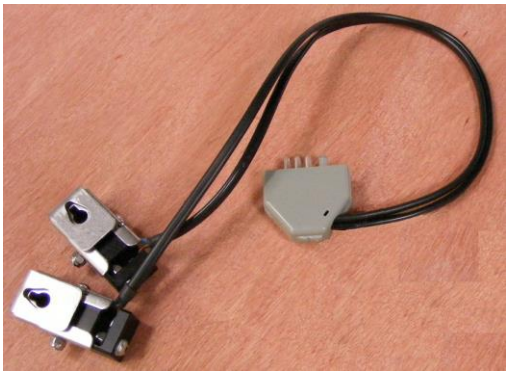
The battery is recharged by unclipping the lamp top from the battery box, which then exposes the connecting socket. The charging lead 207001 (M263716 on NSN 6150-99-601-7147) is then plugged into the charging socket and connected to an approved charger at the other end.

The charging lead requires two charging positions on charger types 204001 (NSN 6130-99-051-0048) or 204007 (NSN 6130-99-641-9797) to recharge the DCF battery pack.

It is very important to ensure that the correct charging profile is used. Chargers must be set to Lithium Ion profile. Older chargers with lead-acid profiles can be adjusted by replacing the chip on the internal circuit board, (see instruction leaflet "Lithium PIC exchange"). Failure to use the correct charging profile will result in short run times and possible permanent damage to the battery.

The black plastic cover which has a spring connection is pushed onto the negative key of the charger; the red crocodile clip is then clipped onto the lower spring clip of the charger which is the positive connection. Charging information is displayed by 2 LEDs, the sequence detail of which is given on the front data panel of the charger.

Depending on the year of manufacture, some charging cables may have a bayonet connection for the charger. These are fitted over the charging keys and then rotated 180 degrees clockwise until coming to a stop on the lower charger spring clip.



Charging usually takes 12 hours, but the battery is 80% charged in 6 to 7 hours and can be used at this time in emergency situations.

The lamp is certified as Category 3 equipment for Zone 2/22 areas.

IMPORTANT: **ALWAYS RECHARGE THE LAMP AFTER USE.**
ONLY TO BE RECHARGED IN NON-HAZARDOUS AREAS.

Transportation.
The L16 Lithium-ion batteries are regarded as non-hazardous goods for road and seafreight shipping, but Class 9 UN3480 as batteries or UN3481 as complete lamps for airfreight transportation. Batteries must be disconnected from all equipment, safely packed in accordance with relevant instructions, and all terminals must be insulated prior to shipment.

Versions of DCF:
NSN 6230-99-148-5086 (current)
DCF with painted battery compartment containing lithium-ion battery pack.

NSN 6230-99-251-7785
DCF with austenitic stainless-steel battery compartment containing lead-acid battery pack (for submarine fleet use only).

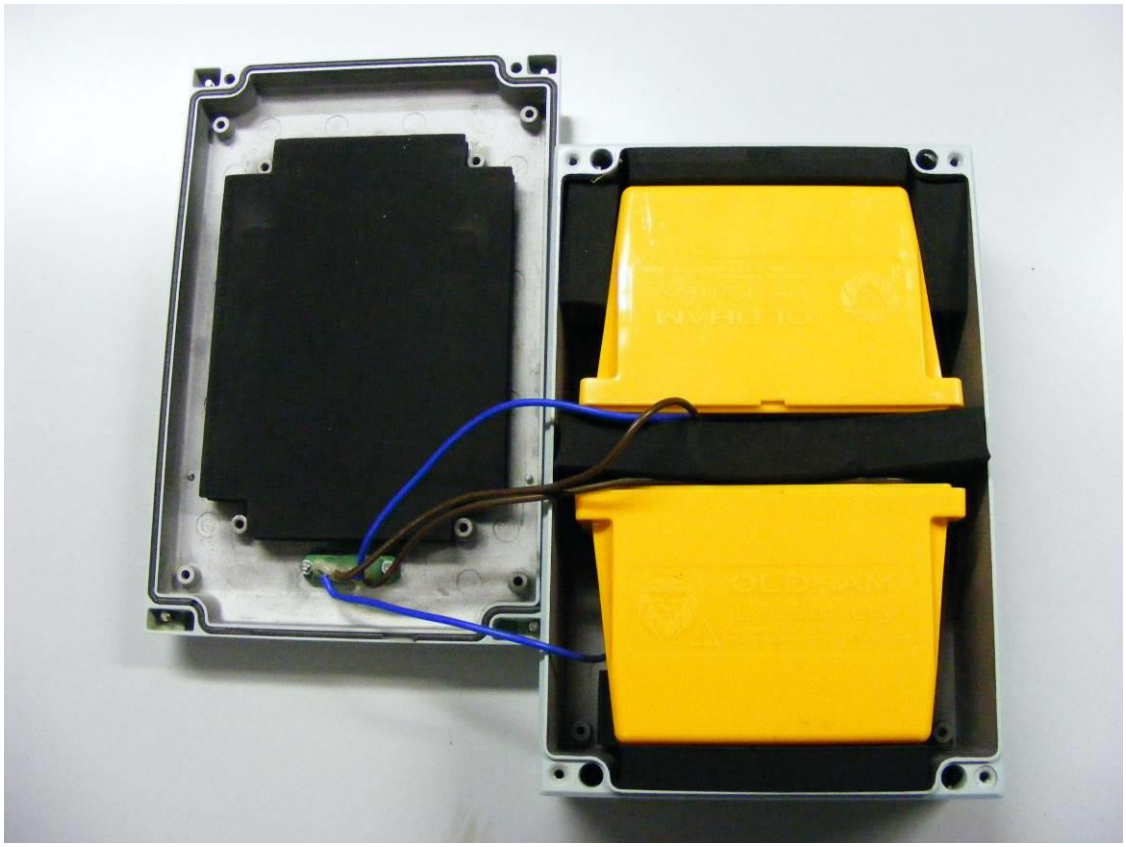
NSN 6230-99-851-1629
DCF with austenitic stainless-steel battery compartment containing lithium-ion battery pack.

Fault Finding:

This is a very simple, reliable lamp and to hasten fault finding the following procedure should be adopted:

1. **The light will not switch on** - unclip the lamp top from the battery, use a multi-meter (set to check coordination or resistance) and clip to the outer pins on the connecting plug. Switch on and see if the bulb has failed (cold resistance is 0.1 Ohms approx.). If the bulb has failed go to section 2 “Replacement of 4V 4A Halogen Bulb Reflector Assembly” or if the bulb is still operational go to section 1. “battery maintenance”.
2. **The battery will not charge -** check the connections on the charger are correct and making a good connection with the charging leads. The black shrouded clip should be pushed over the negative key and the red crocodile clip connected to the lower positive spring clip. If the battery will still not charge go to section 1. “battery maintenance”.

Section 1
Battery Maintenance:



Unclip the lamp top from the battery box and remove the four screws to open the battery box cover. Check the voltage of each battery across the outer terminals with red and black sleeving. At full charge, the voltage should be between 4.10 and 4.20 volts.

Note: if the voltage is higher than 4.25 V it is likely that the battery has been charged on an incorrect profile, possibly set up for lead acid batteries rather than Lithium-Ion. Persistent incorrect charging will cause permanent damage to the battery. The charger should be adjusted to suit the lithium-ion charge profile – see instruction leaflet “Lithium PIC exchange”.

If no voltage is recorded, check that the battery fuses have not blown. If the fuses still have continuity but the battery voltage reads zero, it is likely that the battery has been over-discharged (the lamp left on) and the safety circuit has activated. Remove the zero-voltage battery or batteries and apply a 4.20 V supply for a few seconds to deactivate the safety circuit and then reassemble for connection to the charger.

If the fuses have failed, replace with fuse type 203500 (NSN 5920-99-743-1088).
No other type of fuse or wire should be used.

Note: the charger will not start if the battery voltage is below 2 volts - this is a safety feature necessary to protect lithium-ion battery technologies.

To remove the batteries, pull out the foam packing between them, and disconnect the two red and two black connection cables. If replacing a battery, re-connect the cables, check the fuses, and replace if necessary. Batteries are connected brown cable to positive terminal and blue cables to negative terminal. Always fit in the compartment with “belt-loop” facing down and battery tops toward each other (as per picture on previous page).

To replace batteries; ensure that all terminal connections are tight (torque 0.6Nm) and check the battery cross volts.

Place in the box with terminals facing each other, label facing up, then place the foam packing between the terminals. Replace the outer cover.

Recharge the batteries for 24 hours before use.

Section 2
Replacement of 4V 4A Halogen Bulb Reflector Assembly.

Unclip the lamp top from the battery box.
Remove the bezel/lens glass assembly by slackening off the six captive socket head screws using a 2.5mm Allen Key.

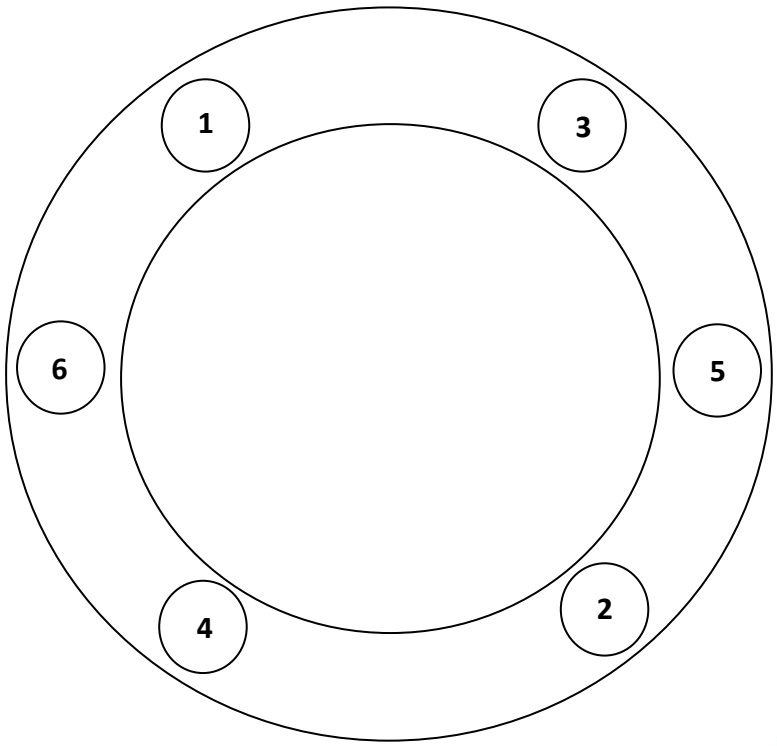
The bulb and reflector assembly (207003, NSN 6240-99-251-7786) is clipped into the bulb holder. Remove the clips then unplug the bulb.

To replace the bulb, see the detail below:

Clip the replacement bulb 207003 (NSN 6210-99-251-7786) into the bulb holder in the headpiece and ensure the spring-clips are located over the top rim of the glass reflector.

Check the bulb reflector is securely held.

Replace the bezel/lens glass assembly, tightening the socket head screws a few turns at a time and alternating between diagonally opposite bolts.



Certification Codes and notes for safe operation:

Certification code is: EEx nC IIC T2 (Ta = 0°C to 40°C)
Other codes: Ex II 3 G D CE

This is category 3 equipment is only suitable for use in Zone 2 and 22 environments.
The safe operating range is 0° C to 40 ° C

WARNINGS:

Do not separate the lamp top from the battery in a potentially hazardous area.
Do not charge or attempt to maintain the equipment in a potentially hazardous area.

Replacement parts list:

Product name	NSN code	Part No. / historic P/N
Damage Control Floodlight	6230-99-148-5086	207000 / M263651
Battery (2 required per lamp)	6140-99-149-9755	203009 / M456371
Fuse (2 required per battery)	6130-99-743-1088	203500 / M455323
Bulb & reflector	6240-99-251-7786	207003 / M263823
Bulb & Reflector Holder Ass'y	6210-99-533-8894	207002 / M263723
Ball lever and nut cover	6210-99-149-2087	207502 / M263632
Wall-bracket	6210-99-870-5439	207506 / M263746
Battery box with Li-ion batts.	6140-99-567-1170	207004 / M263951
Lamptop assembly	6230-99-873-3105	207005 / M264151
Battery case (exc. Batteries)	6160-99-958-3507	207512 / M264251
Cyclon Battery Pack (Subs only)	6140-99-990-3631	207513 / M264651
Ball lever cover and nut	6210-99-549-1518	207008 / M264823
Lens ring gasket	5330-99-657-6380	207508 / M263848
Set of seals	5330-99-617-3217	207511 / M263948
Switch assembly	6210-99-742-5173	207009 / M265423
Charging equipment:		
Charging lead	6150-99-601-7147	207001 / M263716
DCF - Retainer belt for charger	6230-99-128-1001	207503 / M263646
Twin-lamp charger	6130-99-051-0048	204001 / M655601
10-type charger	6130-99-641-9797	204007 / M656215

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