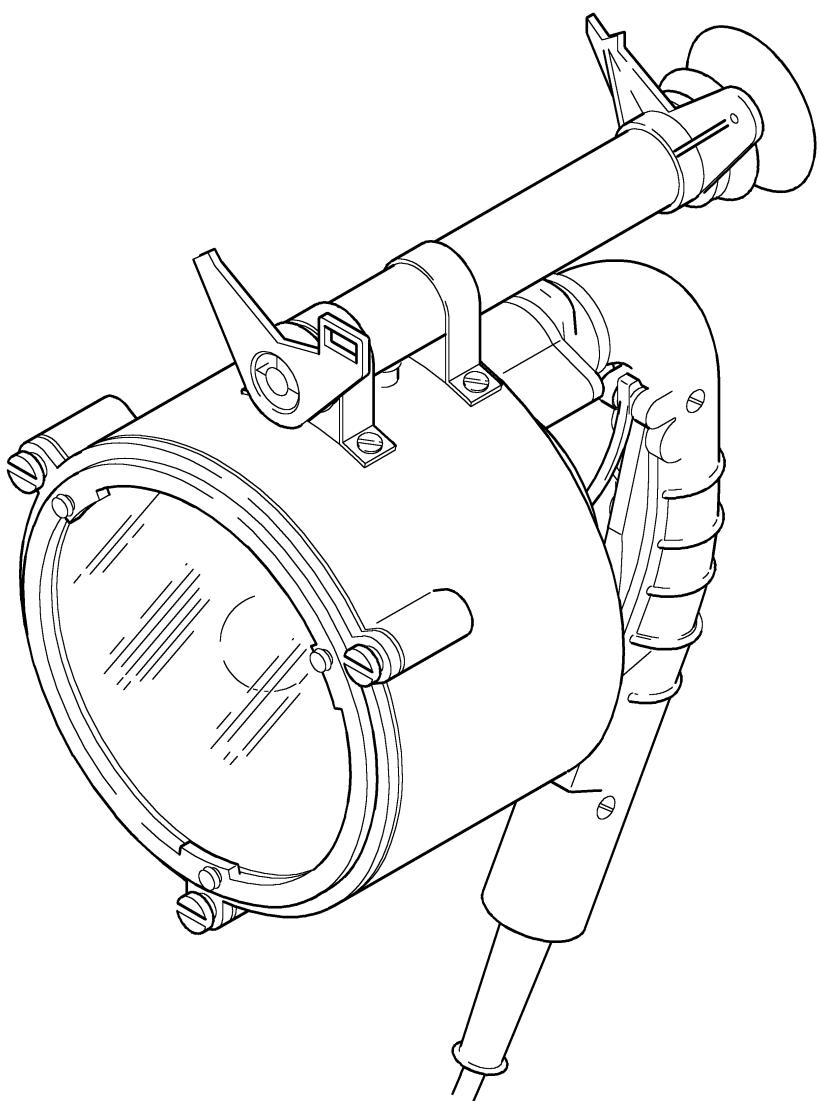


**NORSE**light



**DM60 Signalling Lantern  
User Information**



# Contents

	<i>Page</i>
<b>USER INFORMATION FOR DM60 SIGNALLING LANTERN</b>	<b>1</b>
INTRODUCTION.....	1
SAFETY PRECAUTIONS .....	1
TECHNICAL INFORMATION.....	2
<i>Electrical Characteristics</i> .....	2
OPERATING INSTRUCTIONS.....	3
SETTING TO WORK.....	3
<i>When fitting the lamp:</i> .....	3
<i>To replace a lamp:</i> .....	4
<i>To replace front glass:</i> .....	4
<i>To replace microswitch:</i> .....	4
<i>Information for Safe use of Batteries and Chargers</i> .....	4
<i>Battery Safety</i> .....	4
<i>Battery Charging</i> .....	5
<i>Battery Care</i> .....	5
TESTING THE SIGNALLING LANTERN .....	6
FAULT FINDING .....	6
<i>Fault:</i> .....	7
MAINTENANCE AND SERVICING REQUIREMENTS.....	7
<b>SPARE PARTS LISTS</b>	<b>8</b>
BARREL ASSEMBLY .....	8
HANDLE ASSEMBLY .....	9
LAMPHOLDER/SHUTTER ASSEMBLY.....	10
FRONT RING ASSEMBLY .....	11
BATTERY CASE/TRANSFORMERS .....	12
CASE/FILTERS ASSEMBLIES.....	13
DM60 SIGNALLING KIT .....	14
DM60 SIGNALLING KIT OPTIONAL EXTRAS .....	15
SPARE PARTS ORDERING.....	16
PARTS DISPOSAL .....	16
SALES AND SERVICE .....	16
GUARANTEE .....	16

# User Information for DM60 Signalling Lantern

**It is imperative that this manual is read carefully and fully understood before using your equipment. For your future reference this manual should be kept in a safe place.**

## Introduction

Thank you for specifying a product from the Norselight searchlights range. All Norselight products are designed to give complete customer satisfaction and are manufactured to the highest engineering standards in order to ensure optimum performance and service life.

The Norselight series of products combine design features proven over many years of service in the most hazardous conditions in marine installations.

In order to prolong the life and performance of your product, we recommend that you only specify Norselight searchlights spare parts. This will also ensure that any warranties on your equipment will not be invalidated. Information on spares ordering and parts is provided in this manual.

Should you ever need to contact Norselight searchlights regarding your equipment, please quote the Product Serial Number at all times. Please complete the following boxes for your future reference purposes.

Product Number	Serial Number

## Safety Precautions

The following instructions must be adhered to in order to ensure a safe working environment and the safety of the user.

- Prevent rain, snow, condensation and water droplets from contacting the lamp as this may cause bulb failure and possible shattering;
- Care should be taken not to look directly at the illuminated light source;
- Should it be necessary to examine the lamp, always use a protective shield to ensure a safe working environment;
- Never attempt to clean the lamp when in use;
- Ensure that the lamp has cooled sufficiently before removal;
- During the cooling down period avoid mechanical or thermal shock to the lamp as this may cause shattering;

- If undue force appears necessary to remove the lamp, the equipment should be inspected by a competent person, or contact the manufacturer;
- When breaking a lamp for disposal, care must be taken to ensure that all the fragments are safely contained. Precautions must be taken against flying glass and other fragments. This operation should be performed outdoors or in a well ventilated area. In ALL cases reference should be made to the lamp manufacturers instructions packed with the lamp;
- Due to the vast range of lamps available, it may appear possible that more powerful lamps can be used in the equipment than for which it was designed. Even when the unit will physically accept a higher wattage lamp, this substitution is not recommended as it is dangerous;
- Although variations in ambient temperature affect lamp life very little, very high temperatures should be avoided. Very low ambient temperatures have no affect on the performance of filament lamps.

## Technical Information

The Signalling Lantern has been designed to Admiralty specification and as such has inbuilt robustness. The equipment is designed as a hand held light unit for use on all craft for ship to ship or ship to shore signalling, utilising Morse code.

The maximum signalling range in daylight is 8 nautical miles (14.8 Km) with a signalling speed of 12 words per minute.

The light output intensity may be varied by attaching coloured filters or a light reduction screen to the front bezel dowel screws. Also, the unit can be used as a spotlight when the switch handle and the trigger are both kept depressed.

### **Electrical Characteristics**

The light signal is powered from either a 12V or 24V dc supply on the vessel or from a portable battery pack.

Electrical connection to the light unit is via a pin connector. The light output is derived from either an 11V or 24V 60 watt APFDC P30d/P15d lamp. The normal lamp life for these lamps is approximately 100 hours.

The unit can also be operated via a transformer unit for mains operation.

### *Design Features*

Dimensions:	Height: 265mm Width: 159mm Depth: 240mm
Weight:	2.2Kg
Operating temperature:	+60°C/-40°C
Class of	
Enclosure:	IP56
Shock Test:	Minimum 30g in 3 planes when housed in stowage box.

Approvals:	Fulfils requirements of SOLAS regulations
	Approved by Bureau VERITAS
	Marine Equipment Directive 96/98/EC

should therefore be taken at all times when handling lamps.

Eye protection must be worn when handling lamps that have been removed from their packaging materials.

The equipment should not be modified in any way that will adversely affect the safe operation of the lamp.

Do not insert or remove a lamp, or open the equipment, unless the equipment is isolated from the electrical supply.

Quartz lamps should not become contaminated with oils, greases or come into contact with the skin.

#### ***When fitting the lamp:***

- Always isolate the equipment from the electrical supply before inserting/removing a lamp;
- Ensure that the lamp is of the correct type and rating;
- Ensure the lamp is correctly located in the lampholder and that the glass bulb is not scratched during insertion;
- Keep the lamp in its packaging until immediately prior to use;
- Ensure that the fitting and lampholder is in a good dry condition. Never allow water to collect in the lamp fitting or come into contact with the lamp;

## **Operating Instructions**

This equipment is designed for use out of doors, in free air.

***Note: This product should not be used for any other purpose than for which it was designed. Any modifications to the product should not be undertaken before consulting the manufacturer or agent.***

To operate the unit, firstly connect to a suitable supply. Depress the lower switch lever in the handle to switch the lamp on. Signalling is carried out by use of the trigger.

The trigger operates a tubular shutter which obscures the light from the reflector, thus creating an on/off effect.

The sight on top of the signalling lantern contains cross-wires thus enabling the user to aim the light at a specific target.

## **Setting to Work**

**Safe service in use necessitates the strict observance of the following precautions.**

Any article fabricated from quartz or glass is inherently fragile and care

- During the insertion of the lamp, special care must be taken in order to avoid too much lateral pressure on the lamp and contacts;
- Ensure that the lampholder is in a good condition. If the contacts show any sign of corrosion the lampholder should be replaced.

#### **To replace a lamp:**

- Remove the front bezel assembly by undoing the three captive screws;
- Depress the trigger, thus exposing the lamp;
- Turn the lamp anti-clockwise to remove;
- This procedure should be reversed to replace the lamp.

**Note:** *It is most imperative that when changing the lamp, the shutter tube should not be depressed from inside the unit. Only the trigger should be used.*

#### **To replace front glass:**

- Remove the front bezel assembly by undoing the three captive screws;
- Remove the six screws from inside the front bezel assembly;
- Remove the inner front bezel. The inner and outer gasket seals can now be removed;
- Fit new front glass;
- Reverse this procedure for re-assembly.

#### **To replace microswitch:**

- Remove the two large screws in the handle and separate the handle halves;
- The microswitch will now be exposed. Remove the nuts securing the microswitch in its position;
- Remove the screws securing the microswitch leads;
- The microswitch can now be removed and replaced;
- Reverse this procedure for re-assembly.

#### **Information for Safe use of Batteries and Chargers**

The following notes should ensure that optimum performance and service life are obtained from the product for many years.

#### **Battery Safety**

- Batteries are electrically live at all times. Take great care never to short-circuit the battery terminals;
- Never attempt to remove the battery pack from its' housing, remove the battery lid or tamper with the internal workings. The batteries used are 'low maintenance' requiring no electrolyte top-up or measurement of Specific Gravity;
- When a battery has reached the end-of-life, it must be disposed of correctly. NEVER throw batteries in the bin as they contain harmful substances that damage the environment. NEVER bury batteries in the ground or

incinerate them, as this is unsafe. ALWAYS return the battery to the point of sale, the Local Council tip or any licensed battery dealer for recycling/disposal.

## Battery Charging

The Portable Battery is fitted with a LED status indicator, as per below:

- Flashes Green when fully charged.
- Flashes Amber when the battery is at 50% charge.
- Flashes Red to indicate battery needs charging.

### Please Note:

We recommend that the battery should be kept fully charged and maintained every 3 months, to ensure that the battery does NOT fully discharge. Correct charging of the battery is essential in optimising battery performance and life. NEVER leave a battery in a discharged state as this will damage the battery and it will need to be replaced.

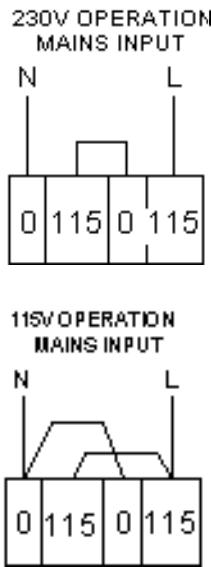
The Battery Charger is fitted with a LED status indicator, as per below:

- Red when charging.
- Green when fully charged.

## Battery Care

- The recommended operating temperature range is -25°C to 20°C. High temperatures will reduce battery service life whilst low temperatures will help to ensure a long service life but batteries used at low temperatures have a reduced performance;
- Depending upon the depth of discharge, over a thousand discharge/charge cycles can be expected from the battery;
- Correct charging of the battery is essential in optimising battery performance and life. NEVER leave a battery in a discharged state as this will damage the battery;
- Cyclic charging is used in applications where the battery is repeatedly discharged then charged. A higher charging voltage is used but should NEVER be left on indefinitely, as this will overcharge and destroy the battery;
- For optimum performance ALWAYS recharge a battery immediately after discharging;
- The storage or shelf life of the battery is usually between 12 to 18 months at 20°C starting from a charged condition. Never store a battery in a discharged or partially discharged state. Always store in a dry, clean, cool environment. If storage of 12 months or longer is required, supplementary charging will be necessary.

For information on the use of the mains transformer, please refer to the wiring diagram below.



#### Notes:

1. The transformer is supplied pre-wired internally and only requires connection to the customer supply.
2. Connect supply accordingly, as shown above.
3. Select voltage output via toggle switch on front of enclosure, 12 or 24V as required.
4. Connect signalling lantern to transformer via plug and socket.
5. For safety purposes, only competent personnel should perform the electrical installation.

## Testing the Signalling Lantern

Upon correct installation and connection to an electrical supply, the equipment can be tested in order to ensure its' correct performance. This work must be carried out by a competent person with some knowledge of electrical equipment.

Equipment required: Multi-meter with leads; Ammeter

Using the equation  $P=VI$ , the approximate power output of the equipment can be calculated in the following way:

- Using the multi-meter take a voltage reading;
- Using the ammeter take a current reading from the live cable to the lamp;
- Multiply these figures together to give an approximate wattage.

For example:

Using a 11V 60w tungsten Halogen lamp,

Voltage reading: 11.8V

Amps reading: 5 amps

Therefore,  $P= VI$

$$P= 11.8 \times 5$$

$$P= 59 \text{ watts}$$

## Fault Finding

If a fault occurs the following procedures should be adopted. Any work to be carried out should be conducted by a competent person. A multimeter should be used to aid fault diagnosis.

### **Fault:**

Lamp fails to light

#### **Causes:**

1. Power not supplied;
2. Microswitch defective;
3. Failed lamp;

#### **Remedy**

1. Check voltage at supply/battery. If necessary recharge battery. If no supply is present then fault is at customer supply. If power is present see remedy 2;
2. Check microswitch for failure using multimeter. If found to be defective replace switch following the guidelines for replacement. If microswitch is found to be working correctly, see remedy 3;
3. Check lamp visually for signs of failure. Disconnect from supply and remove lamp following the correct procedures outlined previously in this manual. Re-connect supply and using a multimeter check supply at lampholder. If supply is present, the lamp will have failed. The lamp can also be checked using a multimeter for continuity of the filament. Disconnect supply again and replace lamp following all precautions and procedures mentioned previously, and the lamp manufacturer's instructions. Re-connect supply and test for correct operation.

## **Maintenance and Servicing Requirements**

In order to prolong the service life and performance of your equipment, the

following maintenance guidelines are recommended:

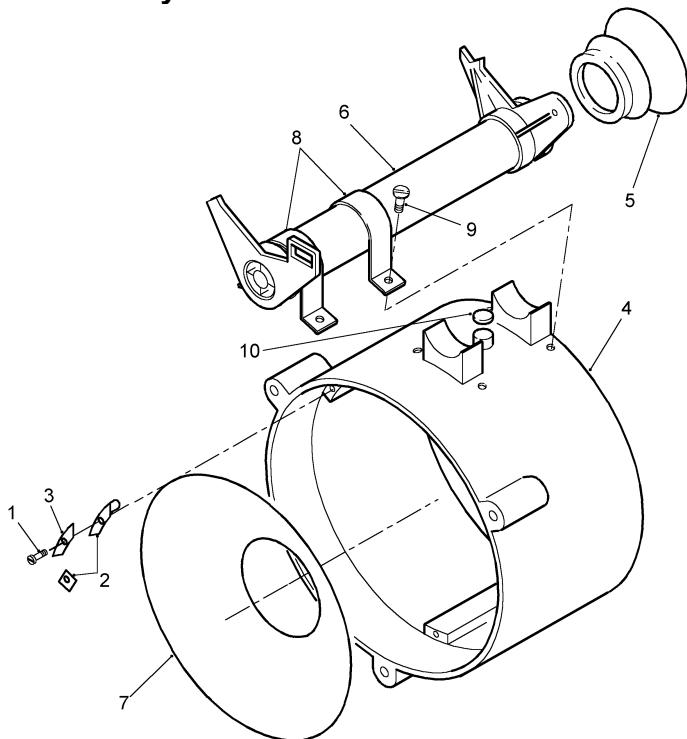
- Maintenance checks should be conducted before every voyage or every three months;
- Before checking, disconnect equipment from the supply;
- Visually check the condition of the equipment;
- Any major or minor structural damage should be rectified immediately;
- After inspection it may be necessary to clean the inside of the unit. The following procedure should be adhered to:
  - Remove the front bezel;
  - Clean the front glass inside and out using a proprietary glass cleaner or methylated spirit;
  - Clean reflector, if required, with glass cleaner;
  - Ensure lampholder is free from corrosion or damage;
  - Check gasket for damage and renew if required;
- Upon completion of these checks, replace the front bezel assembly and test the signalling lantern for full working order.

**Note:** *It is advisable to check all seals and gaskets for degradation. If replacement is necessary the kit numbers are quoted in the back of the spares lists.*



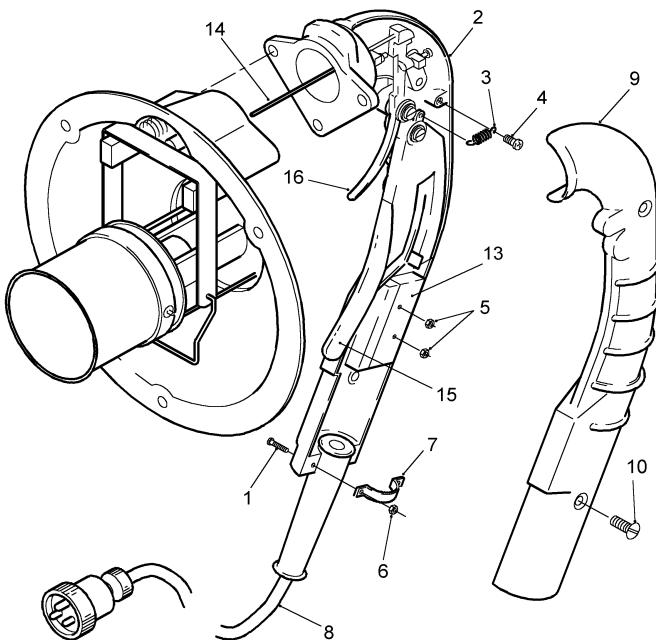
# Spare Parts Lists

## Barrel Assembly



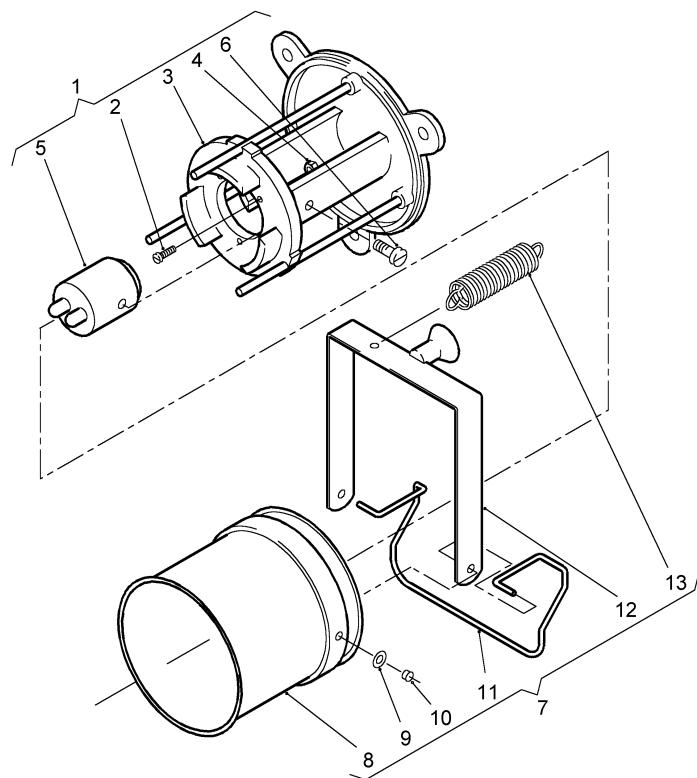
Item No.	Description	Part No.	No. Off
	Barrel Assembly (MOT)	Contact sales	1
	Barrel Assembly (MOD)	Contact sales	1
1	Screw - M3 x 10 Cheese Head	Contact sales	3
2	Mirror Clip (MOT)	Contact sales	3
2	Mirror Clip (MOD)	Contact sales	3
3	Bolting Down Plate (MOD)	Contact sales	3
4	Barrel Sub-Assembly (MOD)	Contact sales	1
4	Barrel Sub-Assembly (MOT)	Contact sales	1
5	Eyepiece	Contact sales	1
6	Sight Assembly	Contact sales	1
7	Reflector (MOD)	Contact sales	1
7	Reflector (MOT)	Contact sales	1
8	Sight Clip	Contact sales	2
9	M4 x 8 Raised Countersunk Head	Contact sales	4

## Handle Assembly



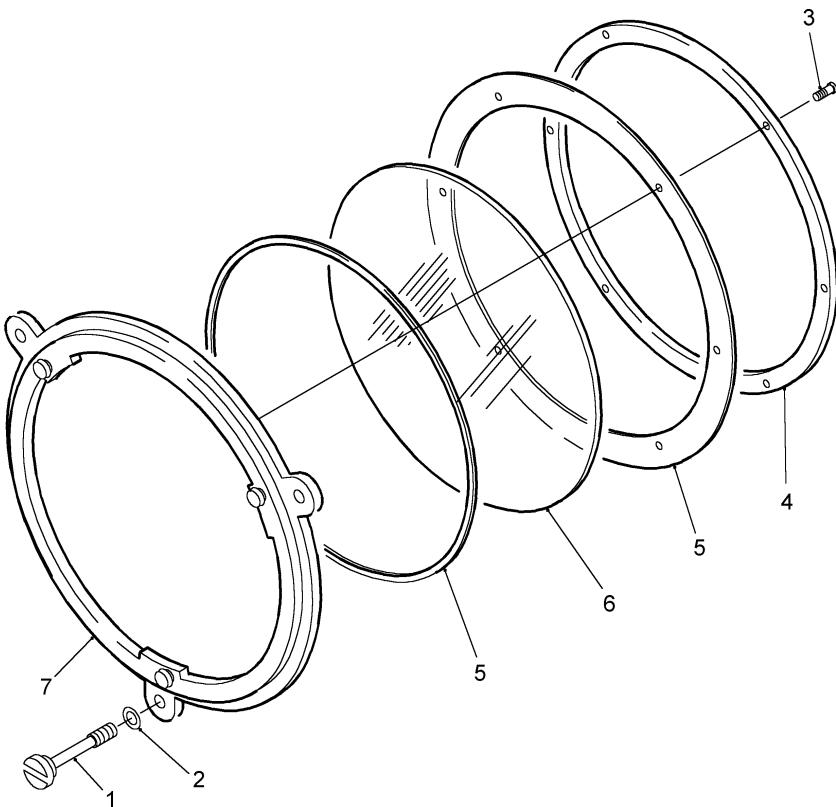
Item No.	Description	Part No.	No. Off
-	Handle Assembly (MOD)	Contact sales	1
-	Handle Assembly (MOT)	Contact sales	1
1	Screw M3 x 20 Pan Head	Contact sales	2
2	Handle	Contact sales	1
3	Switch Spring	Contact sales	1
4	Screw 6-32 UNC x 3/8 in. Pan Head	Contact sales	2
5	Nut M3	Contact sales	2
6	Nut M3	Contact sales	2
7	Saddle	Contact sales	1
8	Cable Assembly (MOD)	Contact sales	1
8	Cable Assembly (MOT)	Contact sales	1
9	Handle cover	Contact sales	1
10	Screw M5 x 25 Countersunk Head	Contact sales	2
11	3-pin Plug (MOT)	Contact sales	1
12	2-pin Plug (MOD)	Contact sales	1
13	Microswitch	Contact sales	1
14	Push Rod	Contact sales	1
15	Switch Lever Assembly	Contact sales	1
16	Trigger	Contact sales	1

## Lampholder/Shutter Assembly



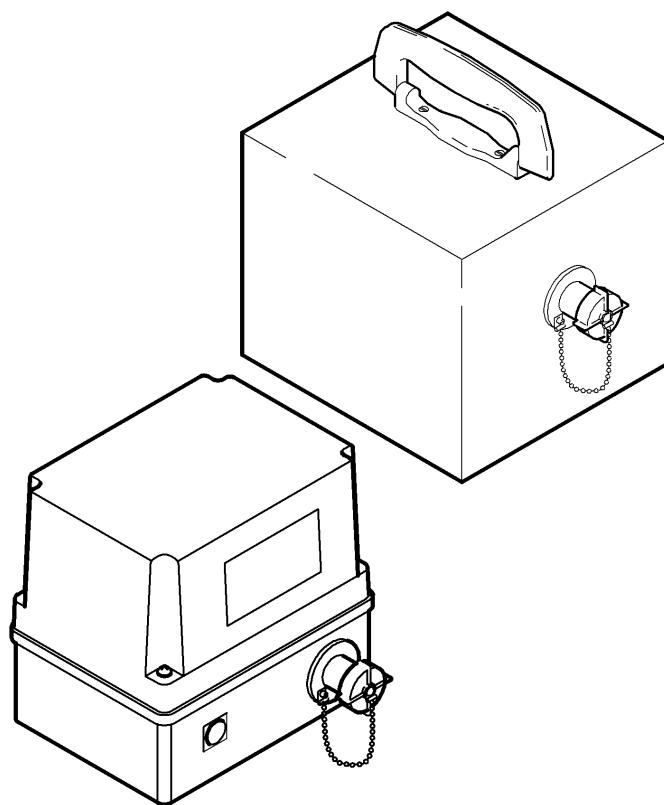
Item No.	Description	Part No.	No. Off
1	Lampholder Assembly (MOD & MOT)	Contact sales	1
2	Screw M2.5 x 8 Cheese Head	Contact sales	3
3	Lampholder Carrier Assembly (MOD & MOT)	Contact sales	1
4	Nut M2.5	Contact sales	3
5	Lampholder Body/Leads Assembly	Contact sales	1
6	Screw M4 x 6 Cheese Head	Contact sales	1
7	Shutter Assembly Complete	Contact sales	1
8	Shutter Barrel	Contact sales	1
9	Washer M3	Contact sales	2
10	Eyelet	Contact sales	2
11	Shutter Support Spring	Contact sales	1
12	Shutter Arm Assembly	Contact sales	1
13	Shutter Spring	Contact sales	1

## Front Ring Assembly



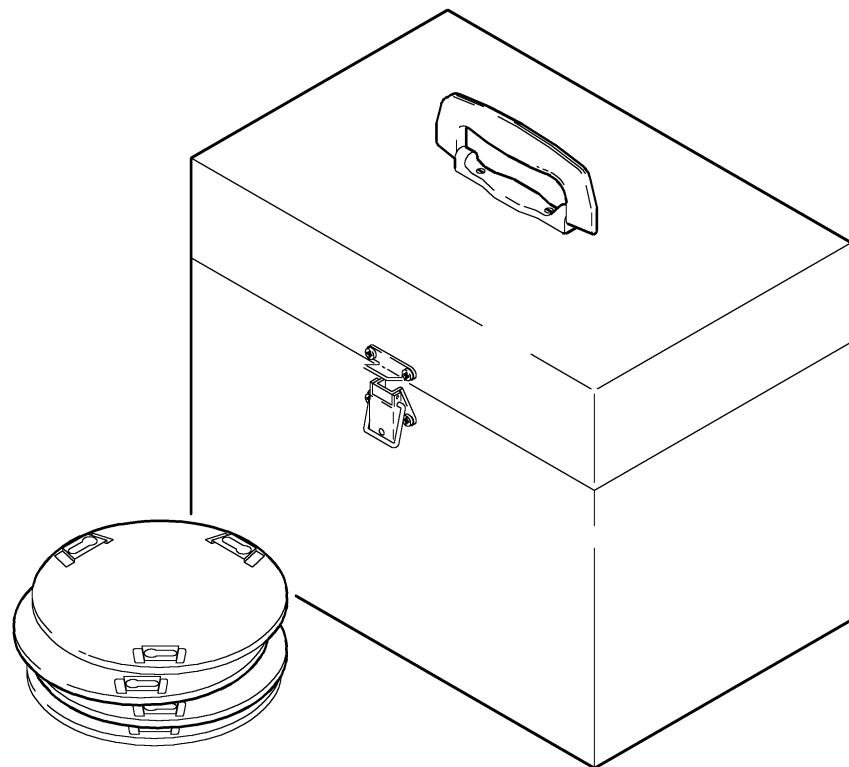
Item No.	Description	Part No.	No. Off
-	Front Ring Assembly Complete (MOD)	Contact sales	1
-	Front Ring Assembly Complete (MOT)	Contact sales	1
1	Front Screw (MOD)	Contact sales	3
1	Front Screw (MOT)	Contact sales	3
2	Washer M5	Contact sales	3
3	Screw M3 x 10 Cheese Head	Contact sales	6
4	Inner Front Ring	Contact sales	1
5	Gasket Seal Kit	Contact sales	1
6	Front Bezel Glass	Contact sales	1
7	Front Ring Sub-assembly	Contact sales	1

## Battery Case/Transformers



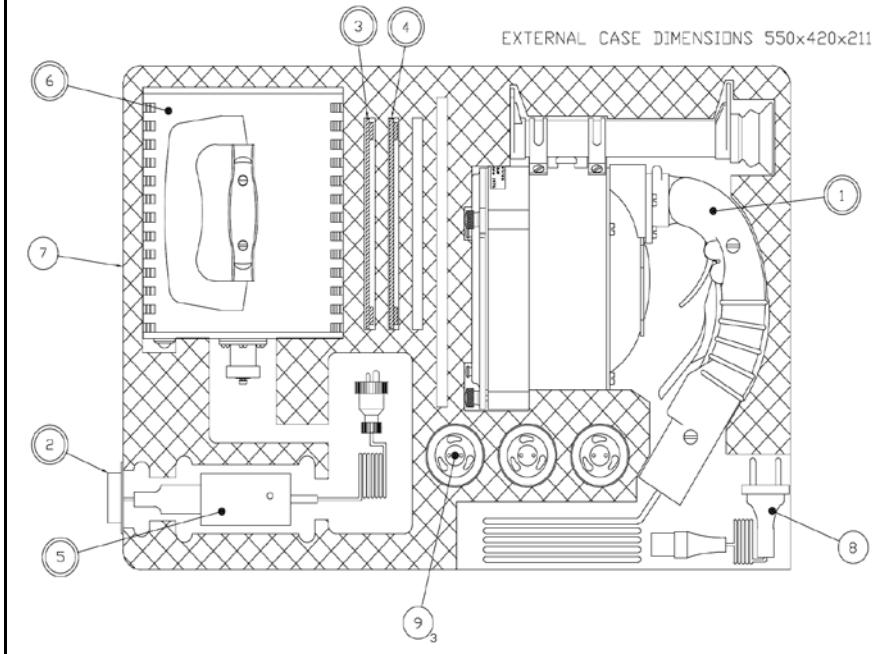
Item No.	Description	Part No.	No. Off
-	12v Battery Box Assembly 2-pin	Contact sales	1
-	24v Battery Box Assembly 2-pin	Contact sales	1
-	12v Battery Box Assembly 3-pin	Contact sales	1
-	24v Battery Box Assembly 3-pin	Contact sales	1
-	Mk V Transformer 115/240v in 12/24v out 3-Pin	Contact sales	1
-	Mk V Transformer 115/240v in 12/24v out 2-Pin	Contact sales	1
-	3 Pin Socket	Contact sales	1
-	2 Pin Socket	Contact sales	1

## Case/Filters Assemblies



Item No.	Description	Part No.	No. Off
-	Reduction Screen Assembly (MOD & MOT)	Contact sales	1
-	Transit Box (MOD)	Contact sales	1
-	Red Filter Assembly	Contact sales	1
-	Green Filter Assembly	Contact sales	1
-	Blue Filter Assembly	Contact sales	1
-	Yellow Filter Assembly	Contact sales	1
-	Amber Filter Assembly	Contact sales	1
-	Infra-red Filter Glass 900 Nm	Contact sales	1
-	Infra-red Filter Glass 950 Nm	Contact sales	1

## DM60 Signalling Kit



Item No.	Description	Part No.	No. Off
1806051	DM60/FSP127 115-230/24V RMRS		
1806052	DM60/FSP127 115-230/12V RMRS		
1806053	DM60/FSP127 115-230/24V NORMS		
1806054	DM60/FSP127 115-230/12V NORMS		
2	Socket Assembly	Contact sales	1
3	Red Filter Assembly	Contact sales	1
4	Green Filter Assembly	Contact sales	1
5	24v Charger Assembly	Contact sales	1
5	12v Charger Assembly	Contact sales	1
6	24v Battery Box Assembly	Contact sales	1
6	12v Battery Box Assembly	Contact sales	1
7	Carrying Case	Contact sales	1
8	Euro Plug Lead	Contact sales	1
9	24v 60w APFCC Lamp	Contact sales	1
9	11v 60w APFCC Lamp	Contact sales	1

## DM60 Signalling Kit Optional Extras

Item No.	Description	Part No.	No. Off
-	UK Plug Lead	Contact sales	1
-	Blue Filter Assembly	Contact sales	1
-	Yellow Filter Assembly	Contact sales	1
-	Amber Filter Assembly	Contact sales	1
-	Reduction Filter Assembly	Contact sales	1
-	3 Pin Socket & Cap	Contact sales	1
-	3 Pin Plug Assembly	Contact sales	1
-	24v Charger & Euro Lead Assembly	Contact sales	1
-	12v Charger & Euro Lead Assembly	Contact sales	1
-	24v Charger & UK Lead Assembly	Contact sales	1
-	12v Charger & UK Lead Assembly	Contact sales	1
-			
-			
-			

## Spare Parts Ordering

In order to prolong the life and performance of your equipment it is recommended that only Norselight searchlights spare parts are specified. Reference should be made to the relevant spares section in this manual. The part number should be quoted at all times so that a price and delivery time can be supplied.

Spare parts or accessories can be obtained from your distributor/agent or directly from the manufacturer.

## Parts Disposal

It is essential that all parts are disposed of correctly and safely to ensure no risk to other personnel. When disposing of lamps the procedures outlined in this manual and the lamp manufacturer's leaflet must be adhered to.

The reworking or modification of parts should not be undertaken before consulting the manufacturer or agent.

## Sales and Service

For sales and service please contact your agent/distributor or contact the manufacturer direct at:

Service: [gpg.technical@glamox.com](mailto:gpg.technical@glamox.com)

Sales: [intercompany@glamox.com](mailto:intercompany@glamox.com)

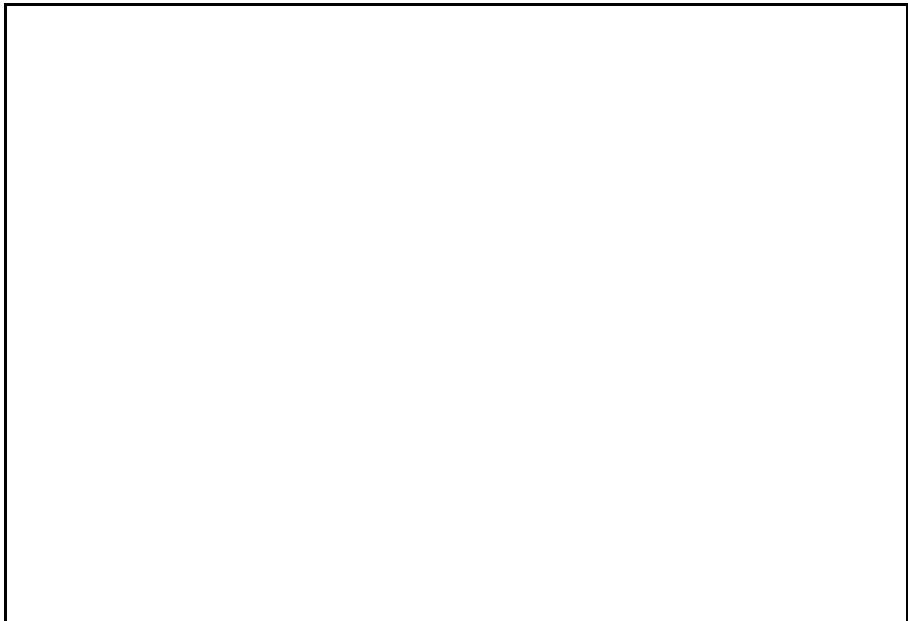
## Guarantee

**This product is covered with a 12 month warranty. Any claim whilst under warranty should be addressed to:**

**[gpg.technical@glamox.com](mailto:gpg.technical@glamox.com)**

June 2016

## Agent/Distributor Stamp



The manufacturer reserves the right to change the information contained within this booklet without prior notice.



Service: [gpg.technical@glamox.com](mailto:gpg.technical@glamox.com)  
Sales: [intercompany@glamox.com](mailto:intercompany@glamox.com)