



User Instruction & Installation Manual

M17 225w LED Spotlight



Product Reference Number:

A6231 – M17 12/24v 225w LED Cabin

A6232 – M17 12/24v 225w Deck

Manufacturer's details:

Francis Searchlights Ltd
Union Road, Bolton
Lancashire, BL2 2HJ, UK
Tel: +44 (0) 1204 558960
Fax: +44 (0) 1204 558979
<http://www.francis.co.uk>
E-mail: sales@francis.co.uk

Distributor details:

Manual Part Number: C28715

Issue: 1 3.7.20

CONTENTS

- 1 - Introduction
- 2 - Safety Precautions
- 3 - Technical Information
- 4 - Unpacking and Installation Instructions
- 5 - Electrical Installation
- 6 - Operating Instructions
- 7 - Fault Finding
- 8 - Maintenance and Servicing
- 9 - General Assembly Drawing
- 10 - Spare Parts List

1 - Introduction

It is imperative that this manual is read carefully and understood before installing your equipment. For your future reference please keep this manual in a safe place.

Thank you for specifying a product from the Francis Searchlights range. All Francis 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 Francis LED range combines features proven over many years' service in the most hazardous conditions in both marine and land installations.

In order to prolong the life and performance of your product, we recommend that you only specify Francis 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 Francis Searchlights Ltd. regarding your equipment, please quote the Product Serial Number at all times.

2 - Safety Precautions

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

- The high luminance of the LED can cause severe damage to the eye if viewed directly. ALWAYS wear suitable protective goggles when viewing the LED.
- Spotlights get hot. Never touch the unit when lit and always allow 10 minutes for cooling down after turning the spotlight off.
- Never place anything on or cover the searchlight when in use.

3 – Technical Information

This product has been designed to operate in accordance with the product specification. The M17 225w LED spotlight has the following features:

- All marine grade materials and fixings.
- Powder coated finish.
- Horizontal rotation 360°.
- Vertical movement $\pm 35^\circ$.
- Instant re-strike. No cooling down time required.
- Economical 30,000-hour LED life.
- 24,000 lumens.
- Colour temperature 6000K.
- Weight – Handheld 2.4Kg – Cabin 4.5Kg – Deck 4Kg.
- Sealing IP67.
- Fitted with a protective front cover (Can be removed if not required)

The spotlight also performs to the following optical data:

- Supply voltage – 12v/24v.
- Divergence – 30°.
- Temperature range: -40 to +50

In order that the spotlight operates correctly it is imperative that competent personnel are responsible for the installation, operation and servicing of this equipment. Failure to adhere to this advice may cause premature failure or incorrect operation of the spotlight, which may damage the equipment or cause personal injury.

4 - Unpacking and Installation Instructions

The following instructions should be read and fully understood prior to installing the equipment to ensure that the correct procedures are followed, and all safety precautions are observed.

Note: If the equipment has been in storage for a considerable amount of time, it is advisable to conduct a routine maintenance check on all parts before installation.

Safety Precautions

This equipment should not be connected to an electrical supply before being installed. Installation procedures should be adhered to in order to ensure a safe working environment and reduce the risk of damage or personal injury.

Preparing the Mounting Position

Mark out and drill 3 off holes $\text{Ø}6.4\text{mm}$ on a 108mm P.C.D.

A central hole $\text{Ø}45\text{mm}$ will be required to accept the movement of the control handle (Cabin model only). Make sure to fit the base sealing gasket, when in the desired position bolt the spotlight firmly down. On an uneven surface a suitable sealant maybe required to provide a weatherproof seal.

5 - Electrical Installation

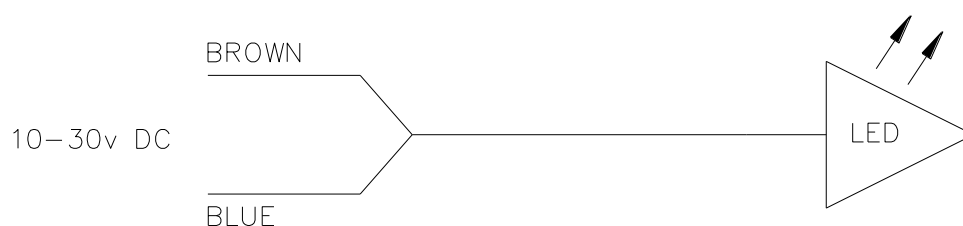
For safety purposes, only competent personnel should perform the electrical installation. All equipment should be installed to current Electrical Regulations and Standards.

In order to obtain the maximum light output from the spotlight, it is essential that the full operating voltage of the LED fitted be applied to the LED contacts.

Method of Electrical Connection

- 1) Disconnect the supply before working on the electrical system.
- 2) The spotlight must be connected to a fused electrical supply, using suitably sized cable.
- 3) If the searchlight is located a considerable distance from the supply, provision must be made in the cable size in order to overcome the voltage drop.
- 4) Whenever possible cable terminations should be made below deck and with approved terminal devices.
- 5) If a spare auxiliary fuse or circuit breaker is not available, one of the correct type/rating should be fitted and connected to a positive supply. It is advisable to locate a bus bar or main connection and avoid any direct connection to the supply:
- 6) When wiring the negative supply, the direct connection to a battery or supply, or metal hull/object, should be avoided. It is advisable to use a suitable terminal block or connection.

For ease of use a single pole switch, of the appropriate rating, should be fitted in a convenient location. All cable lengths should be kept to a minimum.



6 – Operating Instructions

This equipment is designed for use out of doors, in free air. Never place anything on, or cover, the spotlight when in use as this may present a hazard.

The spotlight can be tilted $\pm 35^\circ$ by pushing or pulling the underdeck handle.

Before switching on the searchlight make sure to remove the plastic film sheet off the front protective cover.

This product should not be used for any purpose other than for which it was designed. Any modifications to the product should not be undertaken without consulting the manufacturer.

7- Fault Finding

All fault finding must be conducted by a competent person or qualified Electrical Engineer.

Failure of LED to light.

In the event of the LED failing to light the following steps should be taken:

Check that the supply is connected to the input of the LED and check all connections

On operation if the LED does not light, switch off supply and check all fuses

8 - Maintenance and Servicing

In order to prolong the service life and performance of your spotlight, the following maintenance guidelines are recommended:

- Maintenance checks should be conducted before every voyage or at least every three months.
- Before checking, disconnect the equipment from the supply.
- Visually inspect the condition of the equipment.
- Any major or minor structural damage should be rectified immediately in order to reduce sympathetic wear.
- It is advisable to check all seals and gaskets for signs of degradation. Renew if necessary.
- Upon completing all maintenance requirements, the spotlight should be tested for full working order (approximately 20 minutes).

If in any doubt as to the correct servicing procedures to adopt please contact your distributor/agent or the manufacturer who will be able to advise the best course of action for your product.

L.ED Unit Replacement

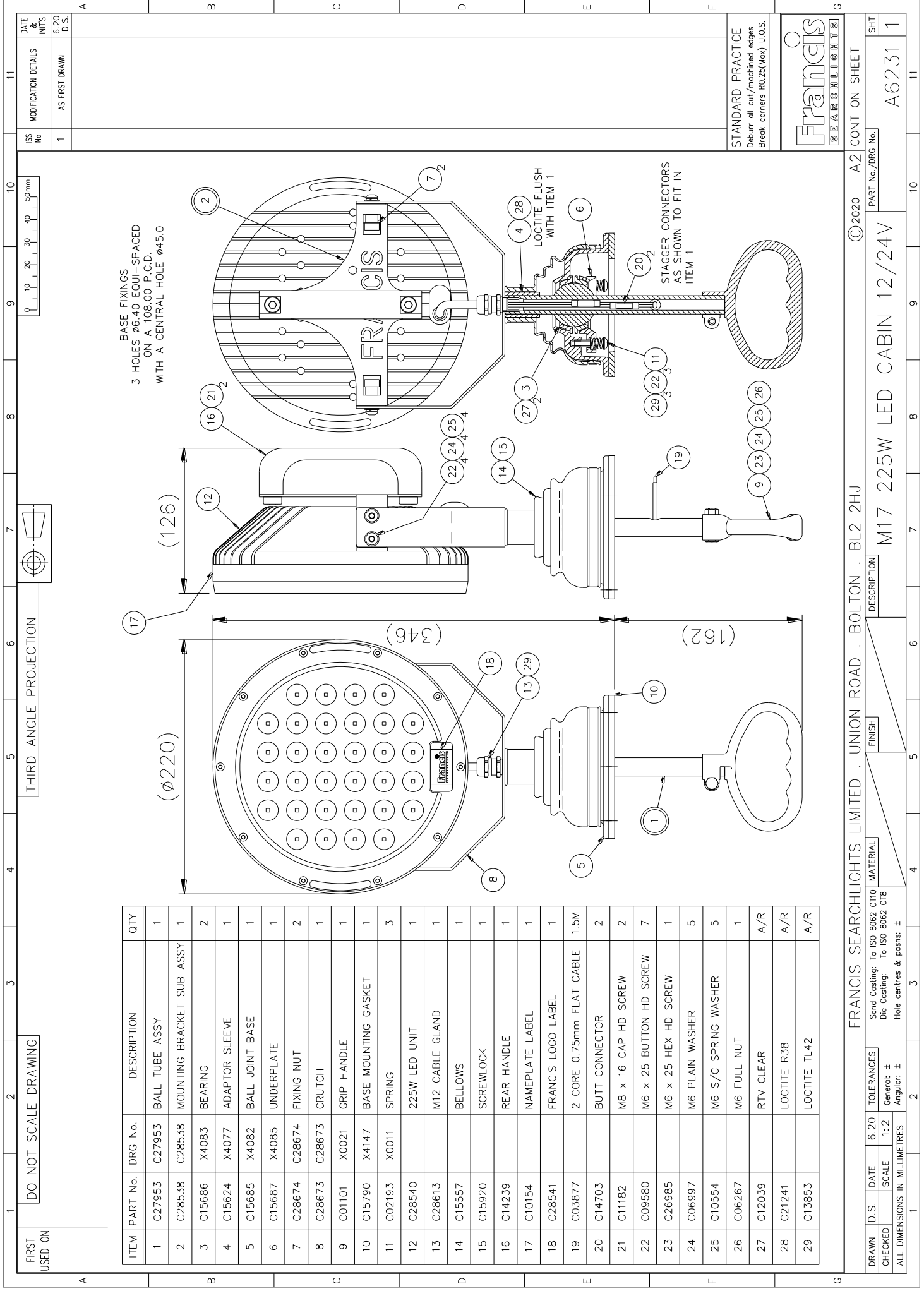
Remove the old LED Unit by releasing the cable gland & undoing the fixings that holds the unit onto the crutch & then pulling through the cable.

Next feed the cable of the new LED Unit through the cable gland and ball tube.

Attach the LED Unit to the crutch.

9 - General Assembly Drawing

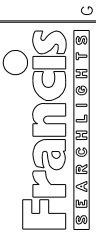
Drawing Number	Description
A6231	M17 Cabin General Assembly
A6232	M17 Deck General Assembly



ISS No	1
DATE & INIT'S	6.20 D.S.
MODIFICATION DETAILS	AS FIRST DRAWN

ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C27953	C27953	BALL TUBE ASSY	1
2	C28538	C28538	MOUNTING BRACKET SUB ASSY	1
3	C15686	X4083	BEARING	2
4	C15624	X4077	ADAPTOR SLEEVE	1
5	C15685	X4082	BALL JOINT BASE	1
6	C15687	X4085	UNDERPLATE	1
7	C28674	C28674	FIXING NUT	2
8	C28673	C28673	CRUTCH	1
9	C01101	X0021	GRIP HANDLE	1
10	C15790	X4147	BASE MOUNTING GASKET	1
11	C02193	X0011	SPRING	3
12	C28540		225W LED UNIT	1
13	C28613		M12 CABLE GLAND	1
14	C15557		BELLOWS	1
15	C15920		SCREWLOCK	1
16	C14239		REAR HANDLE	1
17	C10154		NAMEPLATE LABEL	1
18	C28541		FRANCIS LOGO LABEL	1
19	C03877		2 CORE 0.75mm FLAT CABLE	1.5M
20	C14703		BUTT CONNECTOR	2
21	C11182		M8 x 16 CAP HD SCREW	2
22	C09580		M6 x 25 BUTTON HD SCREW	7
23	C28985		M6 x 25 HEX HD SCREW	1
24	C06997		M6 PLAIN WASHER	5
25	C10554		M6 S/C SPRING WASHER	5
26	C06267		M6 FULL NUT	1
27	C12039		RTV CLEAR	A/R
28	C21241		LOCTITE R38	A/R
29	C13853		LOCTITE TL42	A/R

STANDARD PRACTICE
Deburr oil cut/machined edges
Break corners R0.25(Max) U.O.S.

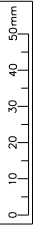


DRAWN	D.S.	DATE	6.20	TOLERANCES	Send Casting: To ISO 8062 CT10 Die Casting: To ISO 8062 C18
CHECKED	SCALE	1:2	Generol: ± Angular: ±	MATERIAL	
ALL DIMENSIONS IN MILLIMETRES				FINISH	
FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU				DESCRIPTION	M17 225W LED CABIN 12/24V
©2020 A2				PART No./DRG No.	A6231
CONT ON SHEET				SHT	1

FIRST USED ON

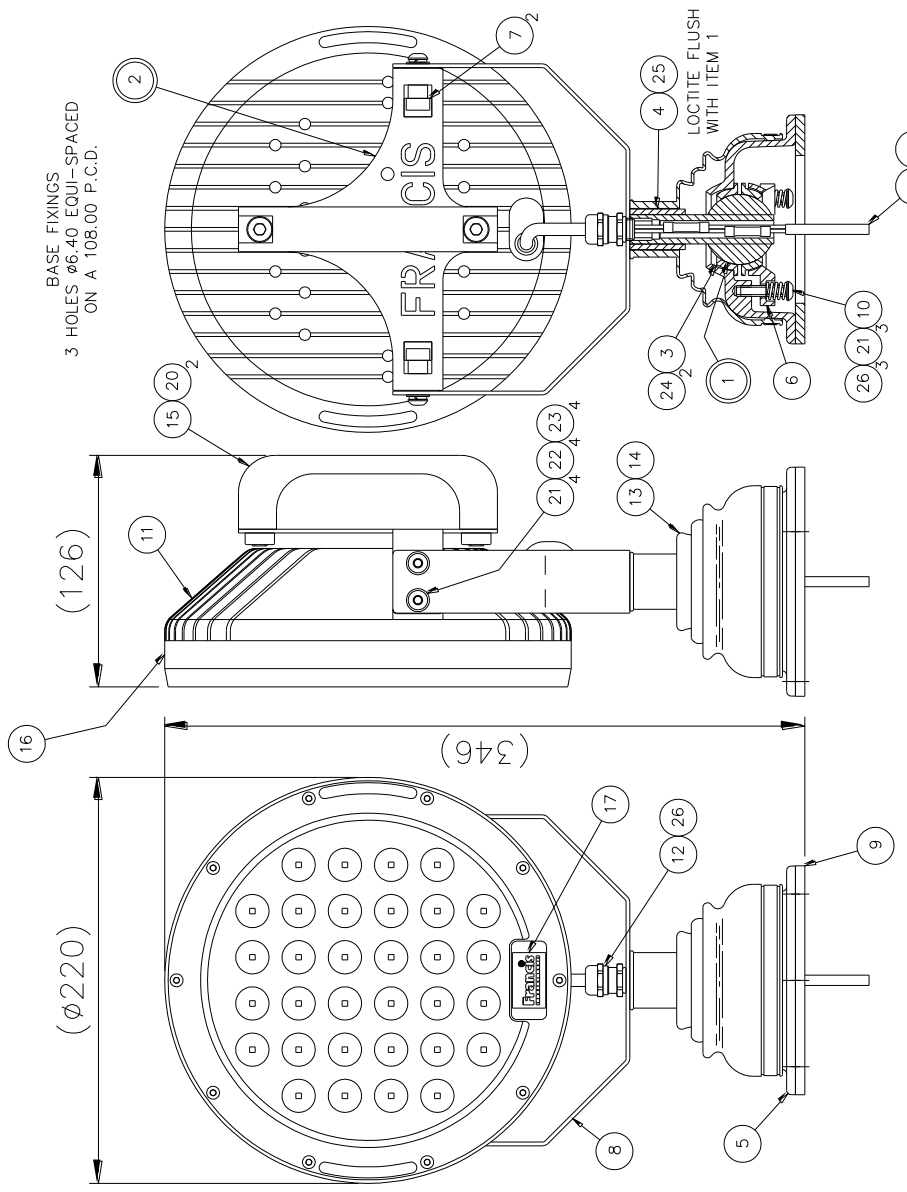
DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION



ISS No	1
DATE & INIT'S	6.20 D.S.
MODIFICATION DETAILS	AS FIRST DRAWN

ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C27957	C27957	BALL TUBE ASSY	1
2	C28538	C28538	MOUNTING BRACKET SUB ASSY	1
3	C15686	X4083	BEARING	2
4	C15624	X4077	ADAPTOR SLEEVE	1
5	C15685	X4082	BALL JOINT BASE	1
6	C15687	X4085	UNDERPLATE	1
7	C28674	C28674	FIXING NUT	2
8	C28673	C28673	CRUTCH	1
9	C15790	X4147	BASE MOUNTING GASKET	1
10	C02193	X0011	SPRING	3
11	C28540		225W LED UNIT	1
12	C28613		M12 CABLE GLAND	1
13	C15557		BELLOWS	1
14	C15920		SCREWLOCK	1
15	C14239		REAR HANDLE	1
16	C10154		NAMEPLATE LABEL	1
17	C28541		FRANCIS LOGO LABEL	1
18	C03877		2 CORE 0.75mm FLAT CABLE	1.5M
19	C14703		BUTT CONNECTOR	2
20	C11182		M8 x 16 CAP HD SCREW	2
21	C09580		M6 x 25 BUTTON HD SCREW	7
22	C06997		M6 PLAIN WASHER	4
23	C10554		M6 S/C SPRING WASHER	4
24	C12039		RTV CLEAR	A/R
25	C21241		LOCTITE R38	A/R
26	C13853		LOCTITE TL42	A/R



STANDARD PRACTICE
Debur all cut/machined edges
Break corners R0.25(Max) U.O.S.



FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HJ	© 2020	A2	CONT ON SHEET
DRAWN D.S.	DATE 6.20	TOLERANCES	Send Casting: To ISO 8062 CT10
CHECKED SCALE 1:2	General: ±		Die Casting: To ISO 8062 CT18
ALL DIMENSIONS IN MILLIMETRES	Angular: ±		Hole centres & posns: ±
PART No./DRG No.		DESCRIPTION	
A6232		M17 225W LED DECK 12/24V	
SHT		FINISH	
1			

10 – Spare Parts List

The following spare parts can be ordered directly from the manufacturer:

Part Number	Description
C28540-01	LED Unit Assembly
C15790-00	Base Gasket
C15557-00	Rubber Bellows
C15920-00	Bellows Locking Band
C02193-00	Base Spring
C01101-52	Grip Handle
C14239-00	Rear Handle

In order to prolong the life and performance of your product, we recommend that you only specify Francis Searchlights spare parts. This will ensure that any warranties on your equipment will not be invalidated.

When ordering spare parts please contact the Sales Department at Francis Searchlights Limited. Please quote spotlight model and serial number at all times. This will enable a fast response to your spares' requirements.