



User Instruction & Installation Manual

L380 Remote Control Explorer Tungsten Halogen Searchlight



Product Reference Number:

A7010 – L380RC Explorer 115/240V

A7012 – L380RC Explorer 24V

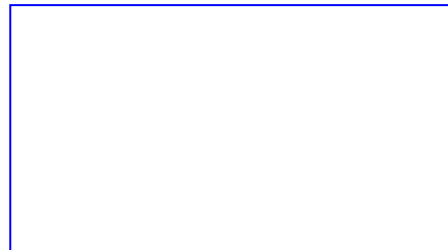
A7011 – L380RC Remote Focus Explorer 115/240V

A7013 – L380RC Remote Focus Explorer 24V

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Distributor details:



Manual Part Number: C26789

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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 LITE 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.

Note: When unpacking or manoeuvring the searchlight into its fixing position, suitable lifting points must be used in order to prevent damage to the equipment or personal injury.

- Prevent rain, snow, condensation and water droplets from contacting the lamp as this may cause bulb failure and possible shattering;
- Quartz halogen bulbs run with a high internal pressure in excess of atmospheric. Whilst the construction is inherently strong, there is a slight risk of the bulb shattering;
- Never look directly into an illuminated searchlight as this may cause severe damage to eyesight. If it is necessary to inspect a lamp whilst in operation, always wear suitable protective goggles;
- Should it be necessary to examine the lamp with the front bezel removed, always use a protective shield and wear goggles to ensure a safe working environment;
- Never attempt to clean a lamp whilst in use;
- Searchlights get hot. Never touch the unit when lit and always allow 15 to 20 minutes for cooling down after turning the searchlight off;
- Never place anything on or cover the searchlight when in use;
- Ensure the lamp has cooled sufficiently before removal;
- 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 the glass fragments are safely contained. This operation must be performed out of doors in free air. In all circumstances refer 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 or voltage lamp, this substitution is not recommended and is dangerous. This action will also void any warranties on the equipment.

Always refer to the lamp manufacturer's technical data when dealing with lamps.

3 - Technical Information

This product has been designed to operate in accordance with the product specification. The L380RC searchlight has the following features:

- All marine grade materials and fixings;
- Parabolic formed aluminium reflector;
- Powder coated finish & stove enamel paint finish;
- 420° horizontal rotation;
- Vertical movement $\pm 40^\circ$;
- Variable speed 1-15°/sec (Pan), 1-5°/sec (Tilt);
- RS485 connectivity & auto home positioning;
- Thermostatically controlled internal heater.(Optional);
- Toughened front glass;

The 115/240v searchlight also performs to the following optical data:

	<u>1000 Watt T/H</u>	<u>1000 Watt T/H</u>
■ Supply voltage	115v	240v
■ Peak Beam Candlepower	1,560,000 lux	1,465,000 lux
■ Range	1249 metres	1210 metres
■ Divergence	6°	5°
■ Operational temperature with heater	-50°C (-20° without)	-50°C (-20° without)

The 24v searchlight also performs to the following optical data:

	<u>150 Watt T/H</u>	<u>250 Watt T/H</u>
■ Supply voltage	24v	24v
■ Peak Beam Candlepower	1,718,000 lux	2,800,000 lux
■ Range	1311 metres	1673 metres
■ Divergence	2°	3°
■ Operational temperature with heater	-50°C (-20° without)	-50°C (-20° without)

In order that the searchlight 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 searchlight, 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 the fixing holes through the deck (refer to drawing C23290). If anti-vibration mounts are to be fitted, the fixing holes for the mounts should also be marked out and drilled. Prior to manoeuvring the searchlight into its' fixing position, the AV mounts should be fitted to the base. When in the desired position, bolt the searchlight firmly down. On an uneven surface it may be necessary to use a suitable sealant such as silicone, in order to ensure a weatherproofed joint.

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 searchlight, it is essential that the full operating voltage of the lamp fitted be applied to the lampholder contacts.

Method of Electrical Connection

- 1) Disconnect the supply before working on the electrical system;
- 2) The searchlight 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. The following table should be used for indication purposes only:

Searchlight	24v 150w	24v 250w	115v 1000w	230v 1000w	230v 650w
Cable Size (mm ²)	Distance Max	Distance Max	Distance Max	Distance Max	Distance Max
1.5	5 MTRS	3 MTRS	17 MTRS	68 MTRS	105 MTRS
2.5	8 MTRS	5 MTRS	28 MTRS	111 MTRS	171 MTRS
4	13 MTRS	8 MTRS	44 MTRS	176 MTRS	271 MTRS
6	20 MTRS	12 MTRS	69 MTRS	275 MTRS	422 MTRS
10	34 MTRS	20 MTRS	115 MTRS	460 MTRS	707 MTRS

- 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 and 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) For 110/220v AC products, the following colour coding system should be used for the customer supply cable:

Brown - Live
Blue - Negative
Green/Yellow - Earth

Note: This equipment must be earthed.

Installation Guidelines

A typical installation and connection routine for the L380RC Low Voltage searchlight is as follows:

Referring to wiring diagram C26717, a supply is fed to the junction box, which then provides a common feed to the motor gearbox, searchlight and joystick panel.

The searchlight has been pre-wired with 3 meters of cable from the motor gearbox to junction box provided. The searchlight head is pre-wired along with the connecting cable to the motor gearbox.

Cables required to be connected by the customer: -

2 pair twisted screened cable from the joystick panel to the junction box.

Supply cable to the junction box.

A typical installation and connection routine for the L380RC High Voltage searchlight is as follows:

Referring to wiring diagram C26716, a supply is fed to the junction box, which then provides a common feed to the motor gearbox, searchlight and joystick panel.

The searchlight has been pre-wired with 3 meters of cable from the motor gearbox to junction box provided. The searchlight head is pre-wired along with the connecting cable to the motor gearbox.

Cables required to be connected by the customer: -

2 pair twisted screened cable from the joystick panel to the junction box.

Supply cable to the junction box.

6 - Operating Instructions

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

The searchlight can be remotely positioned via the joystick control panel, with the facility for movement up, down, left and right. (See Fig 1 below for aid to instructions)

To operate the panel press panel button (1), the button will light up & the joystick (4) is now operational. To switch the lamp on or off press the lamp button (2)

The speed of movement depends on the more pressure applied to the joystick (4) the faster the searchlight moves. When in the desired position the joystick should be released so that it returns to dead centre.

The beam of the searchlight can be adjusted to give a variety of beam types. Using the focus button (3) on the joystick panel, the desired beam can be achieved for any particular application. The beam will move continuously through 'spot' to 'flood'. In order to fix the beam type, simply release the focus button at the desired position.

To return the searchlight to Factory set auto home position (forward and horizontal) simply switch off the joystick panel using the panel button (1) and then press the lamp button (2), the searchlight will then move to the per-programed home position.

To set a new Home position, move the searchlight to the desired home position, switch off the panel (1), move the joystick to the downward position ↓ and simultaneously press the Lamp button (2), and then the Lamp button (2) will flash, to indicate the new programed Home position.

There is the option for added slave panels, the slave panel has all the features of the main control panel i.e. joystick, focus and on/off.

Slave Panel control, to take control of a Slave Panel when a Main Panel is on, press the Panel button (1) twice, the panel button will illuminate, allowing you to control the searchlight from the Main Control Panel & vice versa when switching back to the Main Panel.

When the lamp is switched on, this will illuminate the Lamp button (1) on both the Main & Slave Control panel, also when the Focus button (3) is pressed, both Focus buttons will be illuminated.

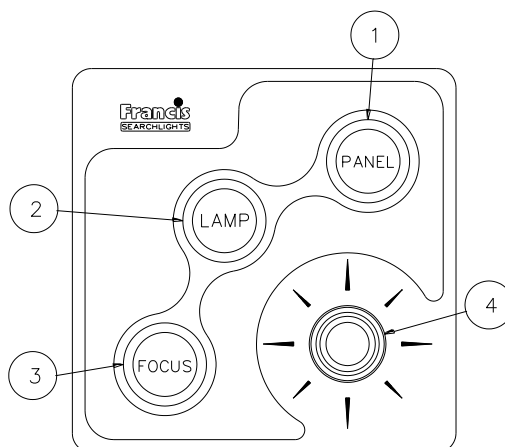


Fig 1

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 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 protective jacket should not be removed from the lamp for safety reasons, as there is a remote possibility of the lamp shattering violently, especially if it is subjected to mechanical shock or vibration;
- Always isolate the equipment from the supply before inserting a lamp;
- Before inserting the lamp ensure that all contacts are clean. Contacts must be renewed at the slightest sign of corrosion. Sanding or filing down corroded areas is not recommended as this will only make the conducting surface between the pin and lampholder smaller, thus causing the lamp to overheat;
- Do not twist or bend the fused quartz bulb when fitting the lamp as mechanical stresses MUST be avoided;
- The lamp must be capable of unimpeded expansion when it warms up to operating temperature. Mechanical forces must not be applied to the fused quartz bulb;
- Before the protective jacket is removed, suitable protection must be worn i.e face mask and gloves with wrist protection;
- Never touch the quartz bulb with bare hands, as fingerprints will make the glass cloudy and cause a severe loss of light. This may also cause recrystallisation and thus weaken the bulb material. Should the bulb be inadvertently touched, remove fingerprints with methylated spirit and a clean, soft paper towel. The bulb should then be wiped with distilled water. NOTE: ALWAYS WEAR MASK AND GLOVES DURING CLEANING);

In all circumstances the lamp manufacturer's data should be referred to when dealing with lamps.

When fitting the lamp:

- Always isolate the equipment from the supply when inserting a lamp;
- Ensure the circuit is suitably fused;
- Ensure the lamp is of the correct power rating and type;
- Check lampholder is in good condition. If the contacts show any sign of corrosion, replace the lampholder;
- Check the lampholder is in a good dry condition. Never allow water to collect in the lamp fitting or come into contact with the lamp.

To fit the lamp:

- Remove the front bezel assembly by operating the safety catch and lifting the catch body ;
- For easier access the light shield/spill ring may be removed by undoing the fasteners;
- Cut open one end of the protective sleeve surrounding the lamp;
- Using the sleeve to prevent the fingers coming into contact with the lamp, position the two pins above the holes in the lampholder;
- Gently push the lamp into the lampholder and remove the protective sleeve;
- Replace the light shield/spill ring and front bezel assembly, ensuring the safety catch is engaged.

Testing

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

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 an amps reading from the live cable to the lamp;
- Multiply these figures together to give an approximate wattage (Power output).

For example:

Using a 24v 150w Tungsten halogen lamp:

Voltage reading = 24v; Amps reading = 6 amps

Therefore, Wattage = $24 \times 6 = 144$ watts

7- Fault Finding

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

Failure of Lamp to light

Causes:

- 1) Power not supplied;
- 2) Fuse blown;
- 3) Failed lamp

Remedy:

- 1) Check voltage at supply. If supply is not present the fault is at the customer supply. If power is present, see remedy 2;
- 2) Check fuse for visual failure. If none noticeable check fuse for continuity using a multi-meter. If fuse found to be faulty, replace with new part and test equipment again for correct working order. If found to be working correctly see remedy 3;
- 3) Firstly, check supply at lampholder connecting block (within searchlight barrel). If supply is present, disconnect unit from power supply before removing the lamp. If noticeable damage to filament is present, the lamp will have failed. The lamp can also be checked for continuity using a multi-meter. Replace lamp ensuring all precautions and instructions previously outlined in this manual are adhered to.

Failure of Remote Focus

Causes:

- 1) Power not supplied;
- 2) Faulty connections;
- 3) Failed motor

Remedy:

- 1) Check voltage at supply. If no supply present fault is at customer supply. If power is present see remedy 2;
- 2) Check all wiring connections on motor and terminal rail, in accordance with the wiring diagram. If found to be correct, see remedy 3;
- 3) Remove focus motor and apply 24v DC directly across terminals. If motor does not rotate the unit has failed. A new focus motor should be fitted to the lampholder assembly.

NOTE: If a fault occurs on the pan and tilt gearbox, the unit should be returned to Francis Searchlights Limited for fault evaluation and repair.

8 - Maintenance and Servicing

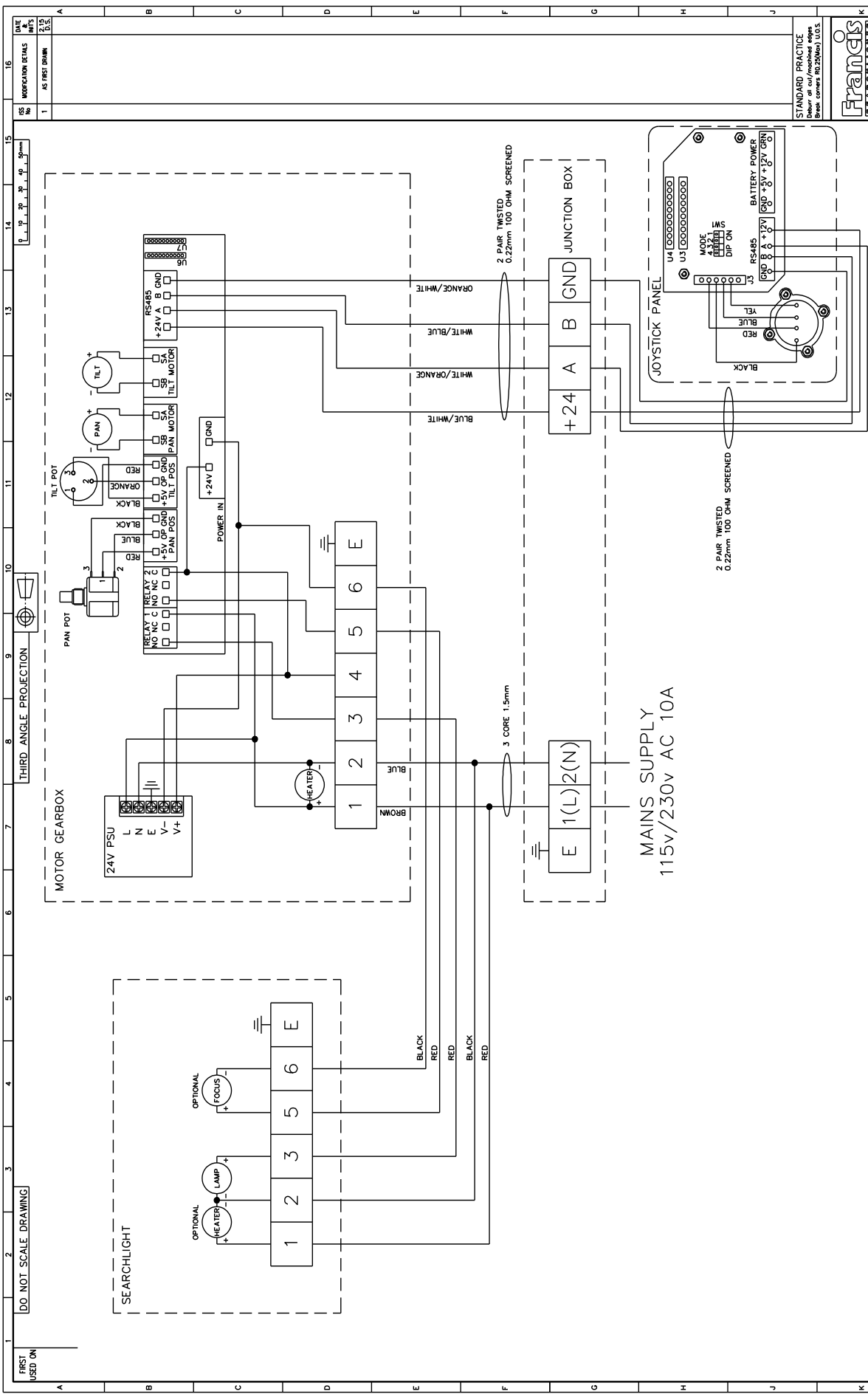
In order to prolong the service life and performance of your searchlight, the following maintenance guidelines are recommended:

- 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;
- After inspection it may be necessary to clean the inside of the searchlight. The following procedure should be adhered to:
 - Remove the front bezel;
 - Clean the front glass inside and out using a proprietary glass cleaner or metal polish;
 - Clean the reflector if required;
 - Ensure that the lampholder is free from corrosion or other damage;
- It is advisable to check all seals and gaskets for signs of degradation. Renew if necessary;
- The searchlight is fitted with a breather unit. This ensures a steady airflow in order to prevent any vacuum forming within the barrel.
- Upon completing all maintenance requirements the searchlight 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.

9 - Wiring Diagram & General Assembly

Drawing Number	Description
C26716	Wiring diagram 115/240v
C26717	Wiring diagram 24v
A7010 / A7012	L380RC Explorer General Assembly
A7011 / A7013	L380RC Explorer Remote focus General Assembly
C26541	Joystick Panel Assembly Manual Focus
C26540	Joystick Panel Assembly Remote Focus
C26683	Junction Box Assembly



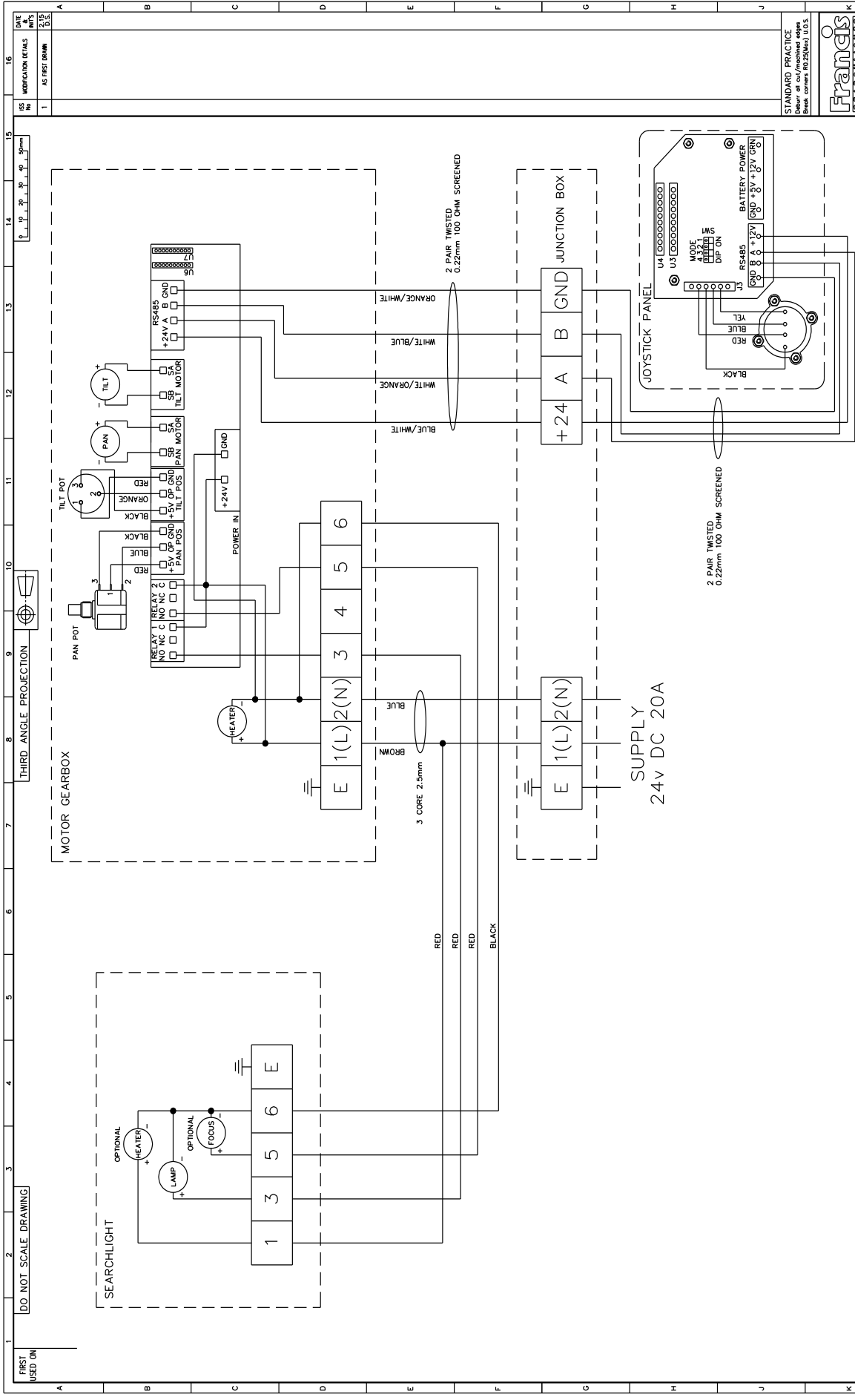
MAINS SUPPLY
115v/230v AC 10A

DATE	15.03.15	15
MODIFICATION DETAILS	AS FIRST DRAWING	16
NO	1	15
1		14
2		13
3		12
4		11
5		10
6		9
7		8
8		7
9		6
10		5
11		4
12		3
13		2
14		1
15		1
16		1

STANDARD PRACTICE
Détour de cut/Assembled edges
Break corner R0.25(Max) U.S.

Francis
SEARCHLIGHTS LIMITED

FRANCIS SEARCHLIGHTS LIMITED UNION ROAD · BOLTON · BL2 2JH
PART NO./DESC. No. A1 CONT ON SHEET
WIRING DIAGRAM LITE RANGE HV EXPLORER 2015
MATERIAL FINISH DESCRIPTION
Screw Castings: To ISO 8062 CT10
Die Castings: To ISO 8062 CT8
Hole centres & points: ±
Angles: ±
General: ±
ALL DIMENSIONS IN MILLIMETRES
DRAWN: D.S. DATE: 15.03.15 TOLERANCES:
CHECKED: SCALE: 1:1
1:1



DATE	16	MODIFICATION DETAILS	AS FIRST DRAWING
OS No	1		
DRAWN	D.S.	DATE	4.2.15
CHECKED		SCALE	
ALL DIMENSIONS IN MILLIMETRES		TOLERANCES	General: ±
		Popular: ±	
		See Catalogue to ISO 8062 C10	
		Die Casting to ISO 8062 C18	
		Hole centres & points ±	
FRANCIS SEARCHLIGHTS LIMITED UNION ROAD BOLTON BL2 2HU		FINISH	
MATERIAL		DESCRIPTION	WIRING DIAGRAM LITE RANGE LV EXPLORER 2015
© 2015 A1 CONT ON SHEET		PART NO./REV. NO.	C26717 1
STANDARD PRACTICE		Debur all cut/machined edges	
		Break corners R0.25(Min) U.S.S.	
Francis		SEARCHLIGHTS	

FIRST USED ON

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

MOTOR GEARBOX

SEARCHLIGHT

JOYSTICK PANEL

GND JUNCTION BOX

SUPPLY 24V DC 20A

DO NOT SCALE DRAWING

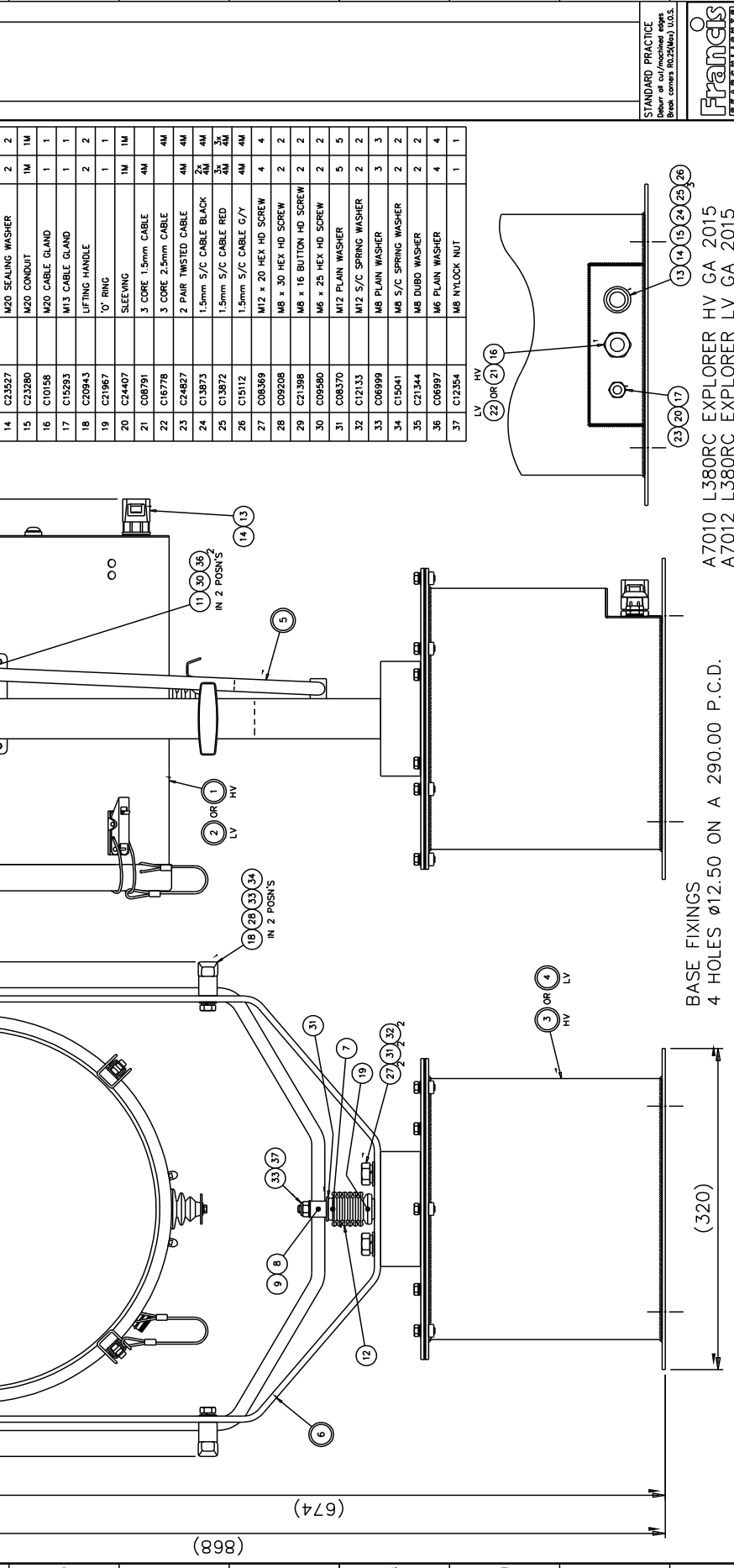
THIRD ANGLE PROJECTION

DATE: 13.03.15
 SCALE: 1:2
 TOLERANCES: General: ±0.10mm
 Holes: ±0.05mm
 Angles: ±0.5°

ISIRI No: 1
 AS PRACT DRAWING

ITEM PART No. DRG No. DESCRIPTION HV LV QTY

ITEM PART No.	DRG No.	DESCRIPTION	HV	LV	QTY
1	C22296	BARREL ASSY (HV)			1
2	C22331	BARREL ASSY (LV)			1
3	C26599	MOTOR UNIT ASSY (HV)			1
4	C26600	MOTOR UNIT ASSY (LV)			1
5	C26763	U-PIECE ASSY			1
6	C26760	CRUTCH SUB ASSY			1
7	C20270	BELLOWS TOP BUSH			1
8	C26768	U-PIECE BLOCK INT BUSH			1
9	C10109	X2644			2
10	C23329	U-PIECE BUSH			2
11	C20281	BELLOWS			1
12	C23527	M20 CONDUIT GLAND			2
13	C23527	M20 SEALING WASHER			2
14	C23527	M20 CONDUIT			1M
15	C15293	M13 CABLE GLAND			1
16	C10158	M13 CABLE GLAND			1
17	C20943	LIFTING HANDLE			2
18	C21967	O' RING			1
19	C24407	SLEEVING			1M
20	C08791	3 CORE 1.5mm CABLE			4M
21	C16778	3 CORE 2.5mm CABLE			4M
22	C24827	2 PAIR TWISTED CABLE			4M
23	C13873	1.5mm S/C CABLE BLACK			2x 4M
24	C13873	1.5mm S/C CABLE RED			2x 4M
25	C15112	1.5mm S/C CABLE G/Y			4M
26	C08369	M12 x 20 HEX HD SCREW			4
27	C09208	M8 x 30 HEX HD SCREW			2
28	C11988	M8 x 16 BUTTON HD SCREW			2
29	C09580	M6 x 25 HEX HD SCREW			2
30	C08370	M12 PLAIN WASHER			5
31	C12133	M12 S/C SPRING WASHER			2
32	C08999	M8 PLAIN WASHER			3
33	C15041	M8 S/C SPRING WASHER			2
34	C21344	M8 DIODE WASHER			2
35	C08997	M6 PLAIN WASHER			4
36	C12354	M8 NYLOCK NUT			1



BASE FIXINGS
 4 HOLES Ø12.50 ON A 290.00 P.C.D.

STANDARD PRACTICE
 Debur all cut/machine edges
 Break corners R0.25(Min) U.0.3.

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A7010 L380RC EXPLORER HV GA 2015
 A7012 L380RC EXPLORER LV GA 2015

CONT ON SHEET A1

DATE: 13.03.15
 SCALE: 1:2
 TOLERANCES: General: ±0.10mm
 Holes: ±0.05mm
 Angles: ±0.5°

ISIRI No: 1
 AS PRACT DRAWING

ITEM PART No. DRG No. DESCRIPTION HV LV QTY

ITEM PART No.	DRG No.	DESCRIPTION	HV	LV	QTY
1	C22296	BARREL ASSY (HV)			1
2	C22331	BARREL ASSY (LV)			1
3	C26599	MOTOR UNIT ASSY (HV)			1
4	C26600	MOTOR UNIT ASSY (LV)			1
5	C26763	U-PIECE ASSY			1
6	C26760	CRUTCH SUB ASSY			1
7	C20270	BELLOWS TOP BUSH			1
8	C26768	U-PIECE BLOCK INT BUSH			1
9	C10109	X2644			2
10	C23329	U-PIECE BUSH			2
11	C20281	BELLOWS			1
12	C23527	M20 CONDUIT GLAND			2
13	C23527	M20 SEALING WASHER			2
14	C23527	M20 CONDUIT			1M
15	C15293	M13 CABLE GLAND			1
16	C10158	M13 CABLE GLAND			1
17	C20943	LIFTING HANDLE			2
18	C21967	O' RING			1
19	C24407	SLEEVING			1M
20	C08791	3 CORE 1.5mm CABLE			4M
21	C16778	3 CORE 2.5mm CABLE			4M
22	C24827	2 PAIR TWISTED CABLE			4M
23	C13873	1.5mm S/C CABLE BLACK			2x 4M
24	C13873	1.5mm S/C CABLE RED			2x 4M
25	C15112	1.5mm S/C CABLE G/Y			4M
26	C08369	M12 x 20 HEX HD SCREW			4
27	C09208	M8 x 30 HEX HD SCREW			2
28	C11988	M8 x 16 BUTTON HD SCREW			2
29	C09580	M6 x 25 HEX HD SCREW			2
30	C08370	M12 PLAIN WASHER			5
31	C12133	M12 S/C SPRING WASHER			2
32	C08999	M8 PLAIN WASHER			3
33	C15041	M8 S/C SPRING WASHER			2
34	C21344	M8 DIODE WASHER			2
35	C08997	M6 PLAIN WASHER			4
36	C12354	M8 NYLOCK NUT			1

FRANCIS SEARCHLIGHTS LIMITED · UNION ROAD · BOLTON · BL2 2HU

A7010 L380RC EXPLORER HV GA 2015
 A7012 L380RC EXPLORER LV GA 2015

CONT ON SHEET A1

DATE: 13.03.15
 SCALE: 1:2
 TOLERANCES: General: ±0.10mm
 Holes: ±0.05mm
 Angles: ±0.5°

ISIRI No: 1
 AS PRACT DRAWING

ITEM PART No. DRG No. DESCRIPTION HV LV QTY

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

FRANCIS SEARCHLIGHTS LIMITED · UNION ROAD · BOLTON · BL2 2HJ

BASE FIXINGS
4 HOLES Ø12.50 ON A 290.00 P.C.D.

A7011 L380RC EXPLORER RF HV GA 2015
A7013 L380RC EXPLORER RF LV GA 2015

STANDARD PRACTICE
Drawn to not/modified edge
Blind corners R12.50mm UNLESS

FRANCIS
SEARCHLIGHTS
LIMITED

DATE: 13.03.15 TOLERANCES:
SCALE: 1:2
SHEET: 1

Drawn: D.S.
Checked: J.S.
All dimensions in millimetres

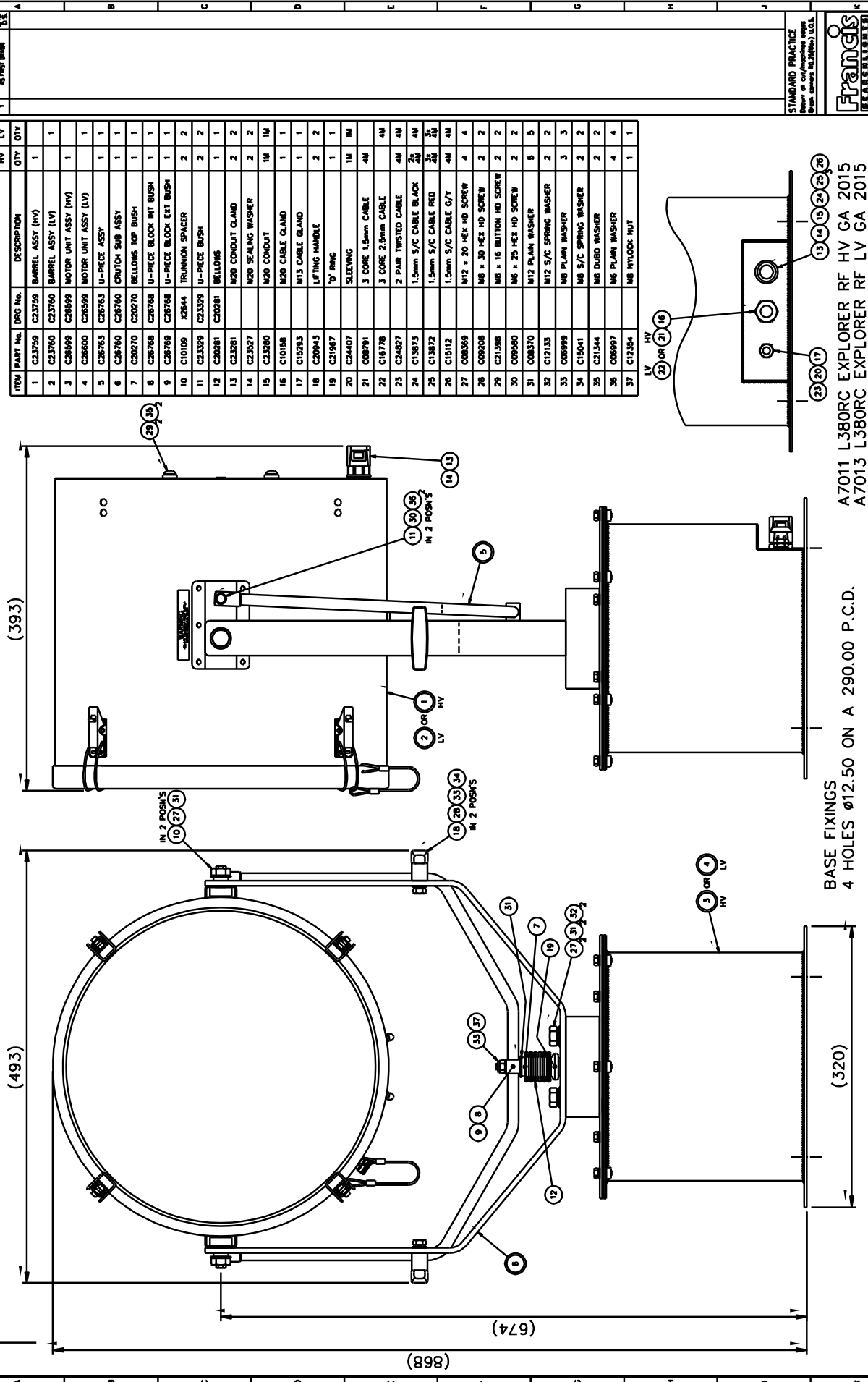
Drawn: G.D. BIRD
Checked: G.D. BIRD
All dimensions in millimetres

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L380RC EXPLORER REMOTE FOCUS GA 2015

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PART No./ORD No.
A7011 1



ITEM	PART No.	DESC. No.	DESCRIPTION	QTY	LV	QTY	LV
1	C23759	C23759	BARREL ASSY (HV)	1			
2	C23760	C23760	BARREL ASSY (LV)	1			
3	C06599	C06599	MOTOR UNIT ASSY (HV)	1			
4	C06600	C06599	MOTOR UNIT ASSY (LV)	1			
5	C26763	C26763	U-PIECE ASSY	1			
6	C26760	C26760	CRUICH SUB ASSY	1			
7	C20270	C20270	BELLOWS TOP BUSH	1			
8	C26768	C26768	U-PIECE BLOCK INT BUSH	1			
9	C26769	C26768	U-PIECE BLOCK EXT BUSH	1			
10	C10109	X2844	TRUNION SPACER	2			
11	C23329	C23329	U-PIECE BUSH	2			
12	C20281	C20281	BELLOWS	1			
13	C23281		M20 CONDUIT GLAND	2			
14	C23227		M20 SEALING WASHER	2			
15	C23280		M20 CONDUIT	1M			
16	C10158		M20 CABLE GLAND	1			
17	C15283		M13 CABLE GLAND	1			
18	C20943		LIFTING HANDLE	2			
19	C21987		O' RING	1			
20	C24407		SLEEVING	1M			
21	C08791		3 CORE 1.5mm CABLE	4M			
22	C16778		3 CORE 2.5mm CABLE	4M			
23	C24827		2 PAIR TWISTED CABLE	4M			
24	C13673		1.5mm S/C CABLE BLACK	2M			
25	C13872		1.5mm S/C CABLE RED	2M			
26	C15112		1.5mm S/C CABLE G/Y	4M			
27	C08869		M12 x 20 HEX HD SCREW	4			
28	C09208		M8 x 30 HEX HD SCREW	2			
29	C21398		M8 x 18 BUTTON HD SCREW	2			
30	C09580		M6 x 25 HEX HD SCREW	2			
31	C08370		M12 PLAN WASHER	5			
32	C12133		M12 S/C SPRING WASHER	2			
33	C08999		M8 PLAN WASHER	3			
34	C15041		M8 S/C SPRING WASHER	2			
35	C21344		M8 DUBO WASHER	2			
36	C09997		M8 PLAN WASHER	4			
37	C12354		M8 NYLOCK NUT	1			

INDICATOR DETAILS

AS FIRST DRAWN

1

16

15

14

13

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6

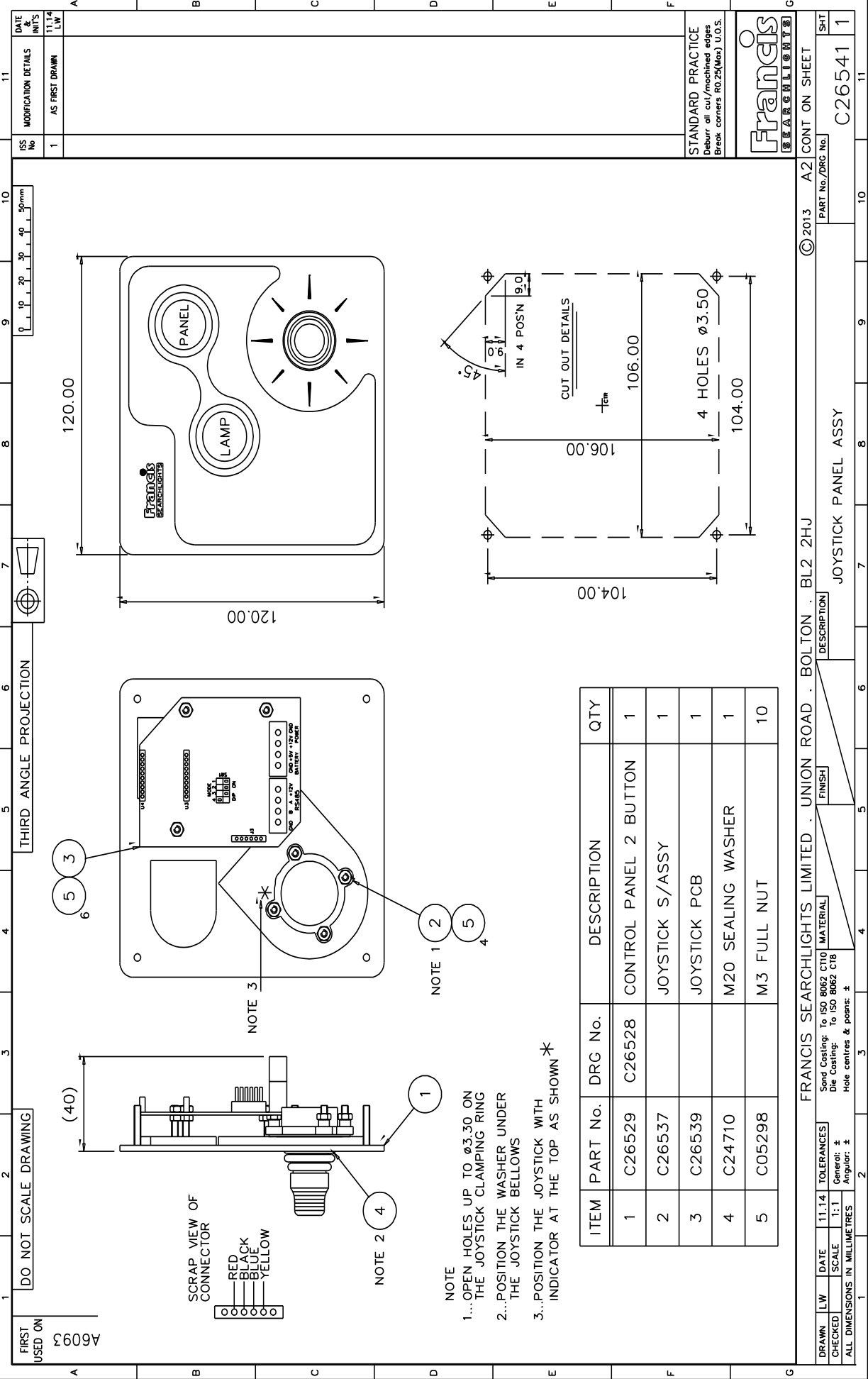
5

4

3

2

1



ISS No	1
MODIFICATION DETAILS	AS FIRST DRAWN
DATE & UNITS	11.14 LW

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

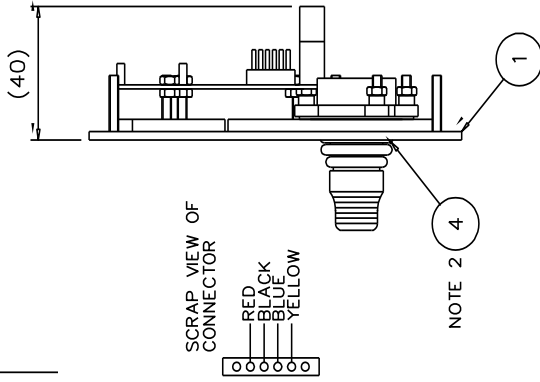


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PART No./DRG No.	C26541	
SHT	1	

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

FIRST USED ON
 A6093



- RED
- BLACK
- BLUE
- YELLOW

NOTE 3

NOTE 1

- NOTE
- 1...OPEN HOLES UP TO $\phi 3.30$ ON THE JOYSTICK CLAMPING RING
 - 2...POSITION THE WASHER UNDER THE JOYSTICK BELLOWS
 - 3...POSITION THE JOYSTICK WITH INDICATOR AT THE TOP AS SHOWN *

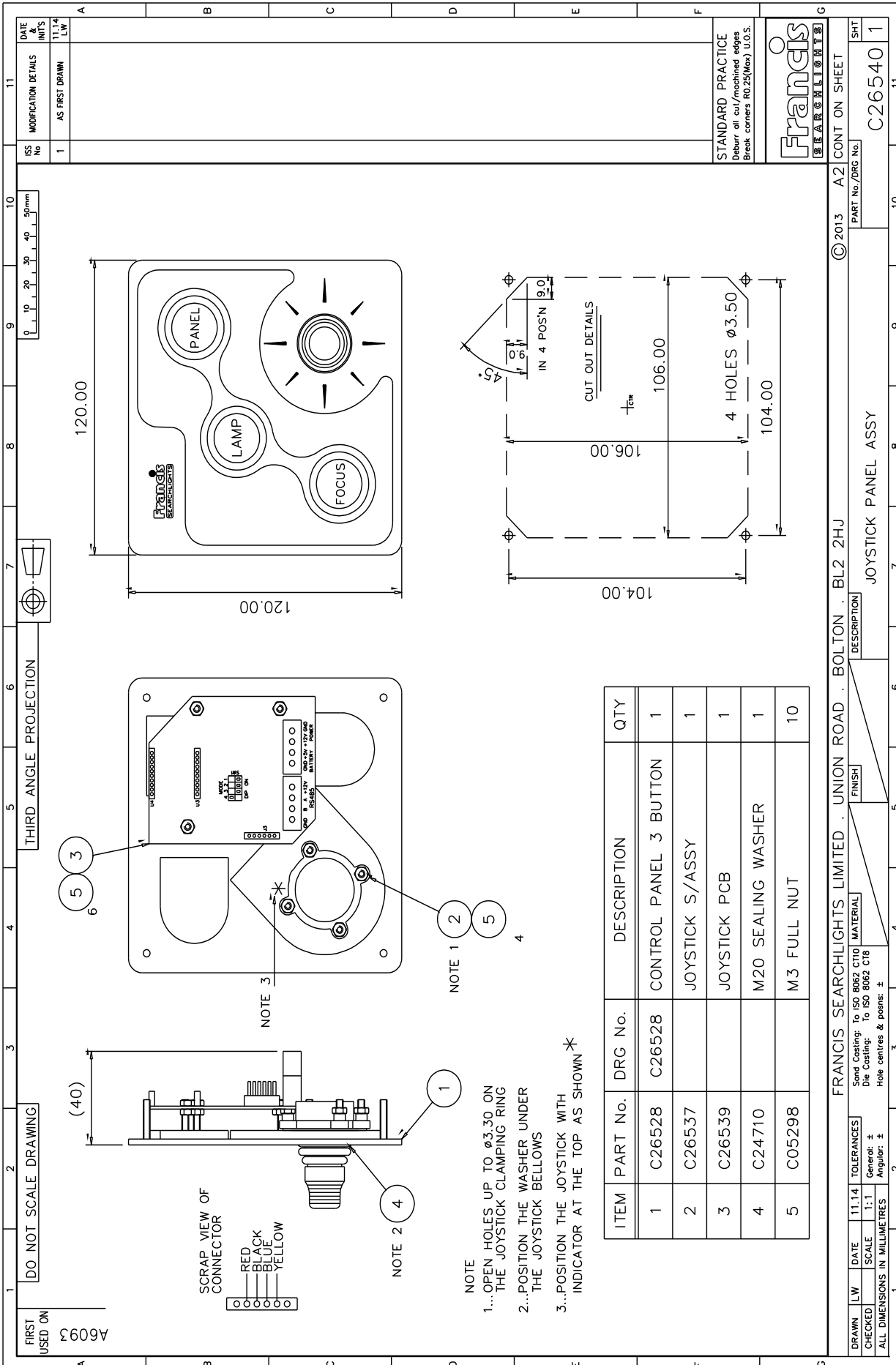
ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C26529	C26528	CONTROL PANEL 2 BUTTON	1
2	C26537		JOYSTICK S/ASSY	1
3	C26539		JOYSTICK PCB	1
4	C24710		M20 SEALING WASHER	1
5	C05298		M3 FULL NUT	10

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HJ

DRAWN	LW	DATE	11.14	TOLERANCES	
CHECKED		SCALE	1:1	General: \pm	Angular: \pm
ALL DIMENSIONS IN MILLIMETRES				Hole centres & posns: \pm	

FINISH	
MATERIAL	

DESCRIPTION
 JOYSTICK PANEL ASSY



FRANCIS SEARCHLIGHTS

DATE 11.14
 MODIFICATION DETAILS
 1 AS FIRST DRAWN

ISS No 1

DATE & INTS
 11.14
 L.W.

11

10 50mm

9 10 20 30 40

8

7

6

5

4

3

2

1

DO NOT SCALE DRAWING

FIRST USED ON A6933

THIRD ANGLE PROJECTION

120.00

120.00

106.00

106.00

104.00

104.00

4 HOLES ϕ 3.50

CUT OUT DETAILS

IN 4 POSN 9.0

NOTE 1

NOTE 2

NOTE 3

SCRAP VIEW OF CONNECTOR

RED
 BLACK
 BLUE
 YELLOW

NOTE

1... OPEN HOLES UP TO ϕ 3.30 ON THE JOYSTICK CLAMPING RING

2... POSITION THE WASHER UNDER THE JOYSTICK BELLOWS

3... POSITION THE JOYSTICK WITH INDICATOR AT THE TOP AS SHOWN *

ITEM PART No. DRG No. DESCRIPTION QTY

1 C26528 C26528 CONTROL PANEL 3 BUTTON 1

2 C26537 JOYSTICK S/ASSY 1

3 C26539 JOYSTICK PCB 1

4 C24710 M20 SEALING WASHER 1

5 C05298 M3 FULL NUT 10

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

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CONT ON SHEET

PART No / DRG No.

JOYSTICK PANEL ASSY

DESCRIPTION

FINISH

Material: Sand Casting: To ISO 8059 CT10 Die Casting: To ISO 8062 CT6

General: \pm Hole centres & posns: \pm

Angular: \pm

ALL DIMENSIONS IN MILLIMETRES

1 2 3 4 5 6

7 8 9 10 11

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU

11

SHT

C26540

1

11

DATE	13.12.11
BY	AS FIRST DRAWN
REVISION	

IS	AS FIRST DRAWN
NO	1

U	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

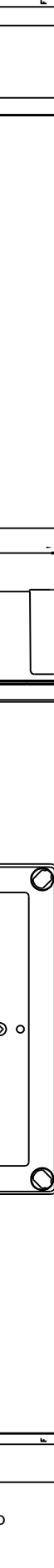
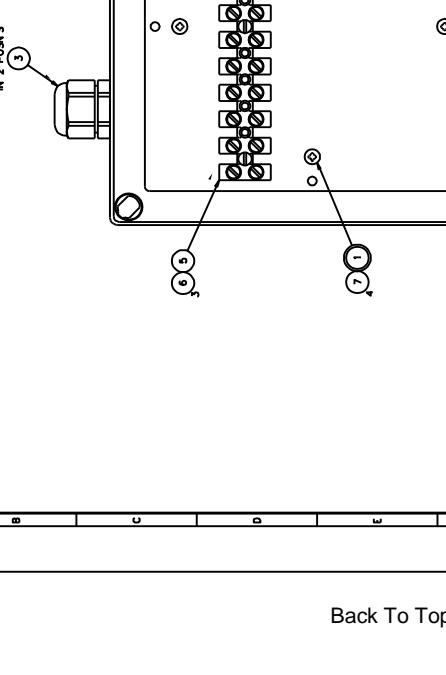
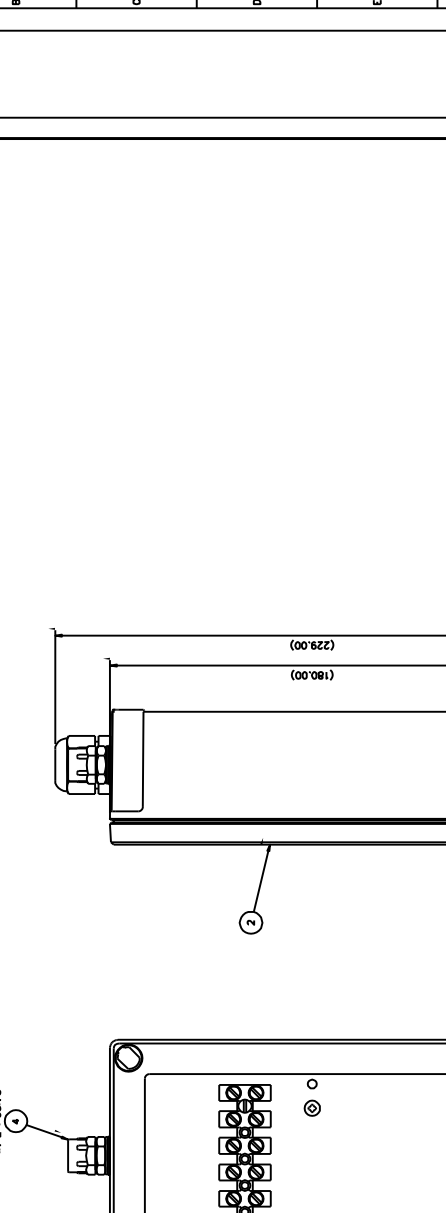
FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION



ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C23602	C23602	CHASSIS PLATE ASSY	1
2	C26684	C26684	JUNCTION BOX DRILLING	1
3	C10158		M20 GLAND	2
4	C15293		M13 GLAND	2
5	C15133		TERMINAL BLOCK 32A	1
6	C10203		M3 x 16 PAN HD SCREW	3
7	C23598		Ø4 x 8 PAN HD POLYIMATE SCREW	4

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

FRANK	D.S.	DATE	10.2.15	COERCANCES
CHECKED	SCALE	1:1	CONVENT	4
ALL DIMENSIONS IN MILLIMETRES				

STANDARD PRACTICE
Detail as cut/matching edge
Bore centre R25(R30) U.C.S.

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PARTS/PROV
C26683 1

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JUNCTION BOX ASSY

FRANCIS SEARCHLIGHTS LIMITED
UNION ROAD BOLTON BL2 2HU

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10 - Spare Parts List

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

Part Number	Description
Searchlight Spares	
D9851	24v 250w 300HRS GX6.35 Tungsten Halogen Lamp
D14795	24v 150w 300HRS GX6.35 Tungsten Halogen Lamp
D4695	24v 250w 2000HRS GX6.35 Tungsten Halogen Lamp
D1809	115v 1000w 750HRS GX9.5 Tungsten Halogen Lamp
D1813	230v 650w 750HRS GX9.5 Tungsten Halogen Lamp
D6715	230v 1000w 750HRS GX9.5 Tungsten Halogen Lamp
C03022-00	Lampholder GX9.5
C16878-00	Lampholder GX6.35
C22305-00	Front Glass
C22011-00	Front Glass Gasket
C16410-00	Motor - Remote Focus
C22310-00	Reflector
C22268-01	Breather Assembly
C16761-00	A.V. Mount
C20281-00	Bellows

Motor Gearbox Spares

C23259-01	Pan Motor Assembly
C23267-01	Tilt Motor Assembly
C23234-00	Pedestal Sealing Gasket
C26595-01	Speed Controller PCB
C26545-00	PSU
C23278-00	Heater 24v
C23277-00	Heater 115/240v

Joystick Panel Spares

C26537-01	Joystick
C26539-00	Joystick Controller PCB

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 searchlight model and serial number at all times. This will enable a fast response to your spares' requirements.