



Navigation Lights



Signalling Lights



Searchlights



Whistles

TECHNICAL DOCUMENT

DHR **230RCN** 230 Remote Controlled Searchlight



Den Haan Rotterdam



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Safety notes:

- Turn power off before inspection, installation or removal
- Keep combustible materials away from lamp
- Do not exceed 105% of rated voltage
- Allow lamp/fixture to cool before handling
- Do not use the searchlight if outer glass is scratched or broken

**Damage due to inappropriate handling is
not covered by the warranty.**

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FOREWORD

Den Haan Rotterdam is a family-owned company established in 1922. Started as a small tinsmith, it has evolved into a globally respected producer of navigation lights, searchlights, air horns and a wide range of nautical lamps made from copper and brass. By introducing products with advanced LED-technology, DHR has safeguarded a visibly safe future for marine vessels in all weather conditions.

Den Haan Rotterdam manufactures halogen searchlights for over 30 years and are known for their robustness, quality and reliability: key values for marine equipment. The RCN-series is the second generation of DHR remote controlled type of searchlights introduced in 2011. This product range is very popular, because of its compact size and its simplicity in installation and operation. The RCN-series includes various types of light sources, such as: halogen bulbs, sealed beams and metal halide bulbs. Also the optical performance is top-notch, thanks to the use of silverplated mirror reflectors in the 260 & 350 models.

The application of the 260- and 350-series searchlights is limitless. Mostly they are beneficial for work boats, tugs, fishing vessels, dredgers and even watch towers for land based solutions.

DEN HAAN ROTTERDAM B.V.

D.M. Den Haan
Managing Director



QUALITY STANDARDS



LED technology



Light Weight Construction



Remote control



IP66 Water Ingress Protection



Excellent Optics



Maintenance Friendly



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1. MOUNTING INSTRUCTIONS



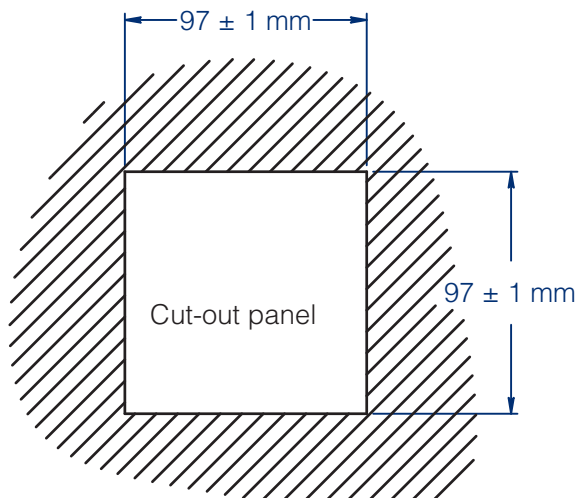
Warning!

Den Haan Rotterdam does not accept responsibility for any damage if the searchlight is installed incorrectly and/or used improperly. When in doubt consult a qualified electrical technician.

Mounting the panel

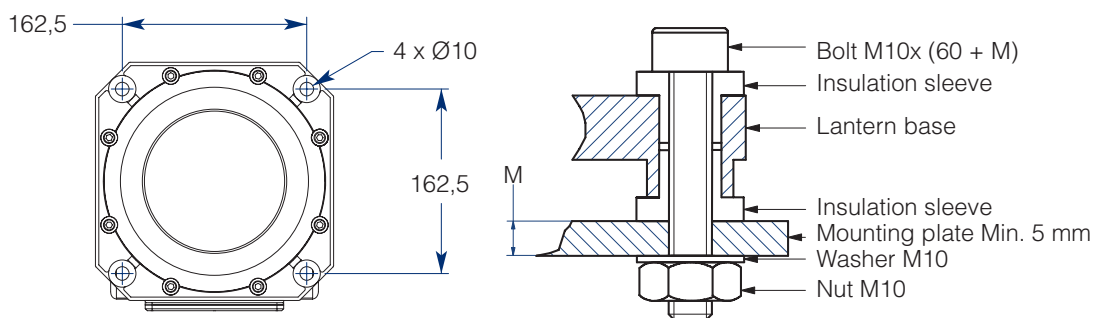
Place the control panel inside the wheelhouse, where it is protected against weather influences. The housing is especially constructed to be flush mounted in an instrument cabinet according the illustration on the right.

The minimum space needed behind the panel is 110 mm. (depth)



Searchlight installation

Install the searchlight in a horizontal upright position with sufficient space around the head of the searchlight to ensure it can move freely. The dimensions can be found on page 9.



All dimensions in mm

Fasteners

- The permissible torque should be 8 Nm
- Use only A4-grade stainless steel

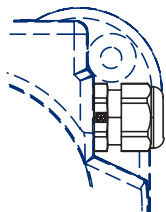
Caution!

Even though the housing is made of corrosion resistant materials, galvanic corrosion may still occur. To prevent galvanic corrosion use the supplied insulation sleeves to isolate the aluminium housing from other metal parts.

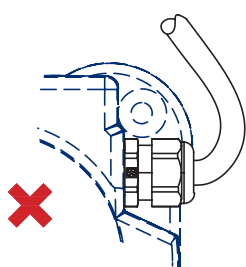
Electrical installation

Install the electrical wiring according to the wiring diagrams showed on pages 11 - 14. Keep the distance between the power supply and halogen lamp as short as possible. Long wires will increase a voltage drop near the halogen lamp, which affects the light output.

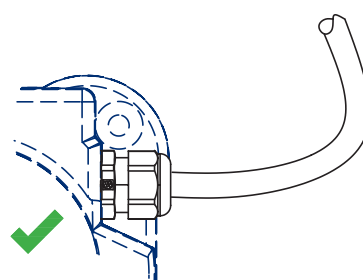
Cable glands



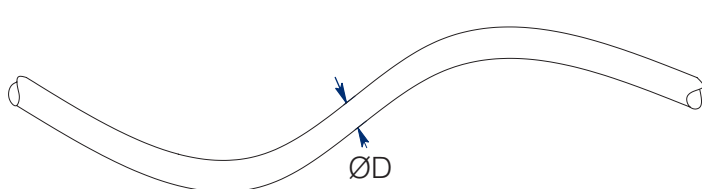
Remove the plug before placing the cable.
If no cable is connected, leave the plug in place!



Cable too tight!
This gives unwanted stress at the sealing of the cable gland and water ingress will occur.

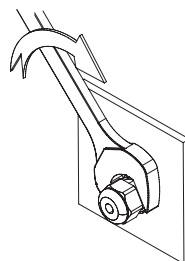


Include cable slack at the entering point of the cable gland



Cable

- Preferred diameter D is 7 - 12 mm
- Material: Neoprene H07RN-F



Replacing cable gland

- Use gasket between housing and cable gland
- Tighten firmly (6Nm) with wrench

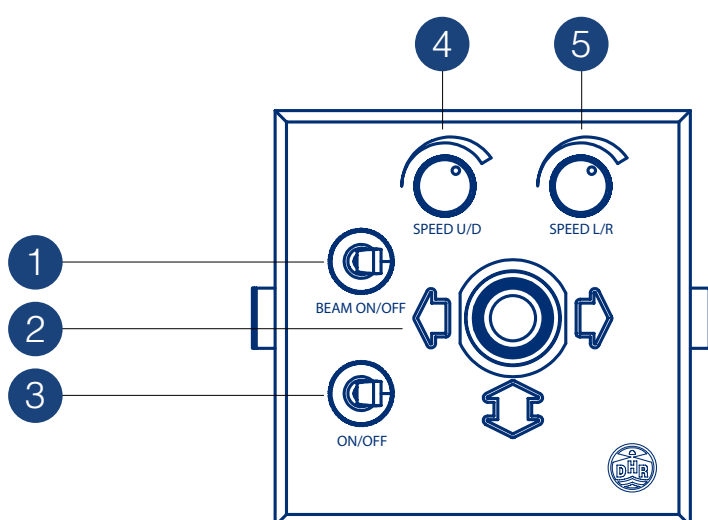
Note

The cable glands on the searchlight prevent water ingress. Do not use (electrical) tape to cover the cable where it enters the cable gland as this will cause water ingress. Do not use a rubber or shrinkable cover on the cable gland to improve water tightness.

2. SPECIFICATIONS

Control panel

Model	PAN2011
Dimensions	
Depth	110 mm
Width	110 mm
Weight	0,6 kg
Electrical	
Voltage	24 VDC±20%
Maximum wattage	20 W
Fuse	T2A
Electrical insulation class	III
Housing	
Front	Stainless steel 316
Back	Aluminium, painted black
Operating temperature	0° / + 45° C



Switches

1. BEAM ON/OFF, switches the searchlight on or off.
2. Joystick, controls the direction of the movement.
3. ON/OFF, switches the panel on or off.

Potentiometers

4. SPEED U/D, speed of the movement up and down.
5. SPEED L/R, speed of the movement left and right.



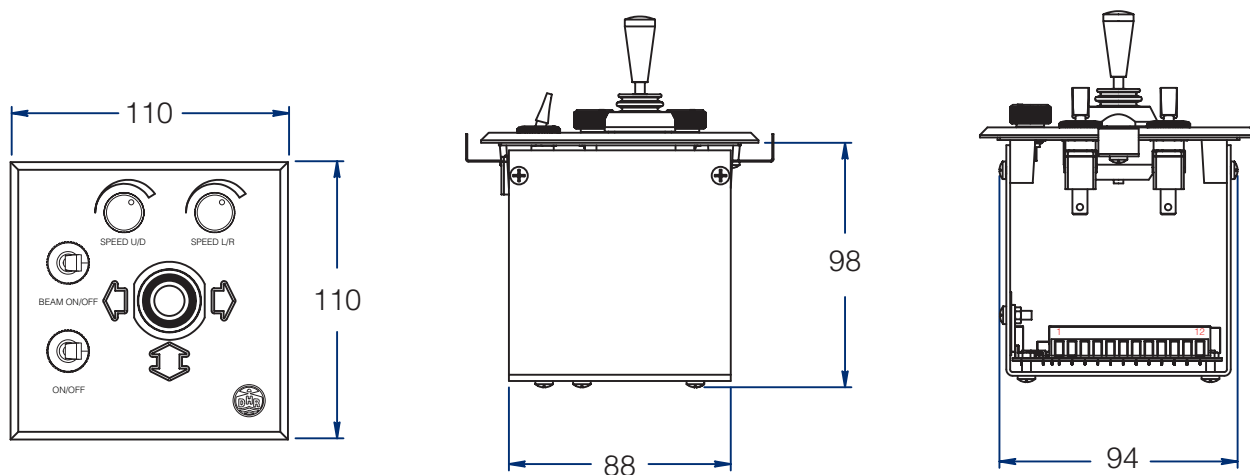
Searchlight

Model	230RCN230
Dimensions	
Height	617 mm
Width	331 mm
Weight	
Electrical	
LED-driver	230 VAC / 75W
Motor voltage	6-13 VDC
Preferred cable type	H07RN-F
Cable diameter	Ø 6-12 mm
Optics	
Mirror	Parabolic mirror reflector Ø 230 mm
Range	775m
Adjustable Focus	No
Beam angle at 50%	6°x6°
Luminous intensity	600.000 cd
LED	
Model	CLU731
Luminous flux	8767 lm
Rated LED voltage	-
Rated LED wattage	-
Average life-time	30.000 h
Color temperature	5000 K
Base	-
Heater	
Type	PTC-heater
Voltage	24VDC
Maximum wattage	70 W
Motor Unit	
Tilt	+ 30° / - 60°
PAN	340°
Max. speed left / right approx.	34°/ sec
Max. speed up / down approx.	3,2° / sec
Housing	
Material	Chromated seawater resistant aluminium
Finish	UV resistant powder coating - White RAL9016
Front glass	Hardened front glass
Seals	Silicone / Neoprene, black
Cable gland	M25x1.5
Operating temperature	- 25° / + 40° C
Ingress protection class	IP66 c/w Membrane vent

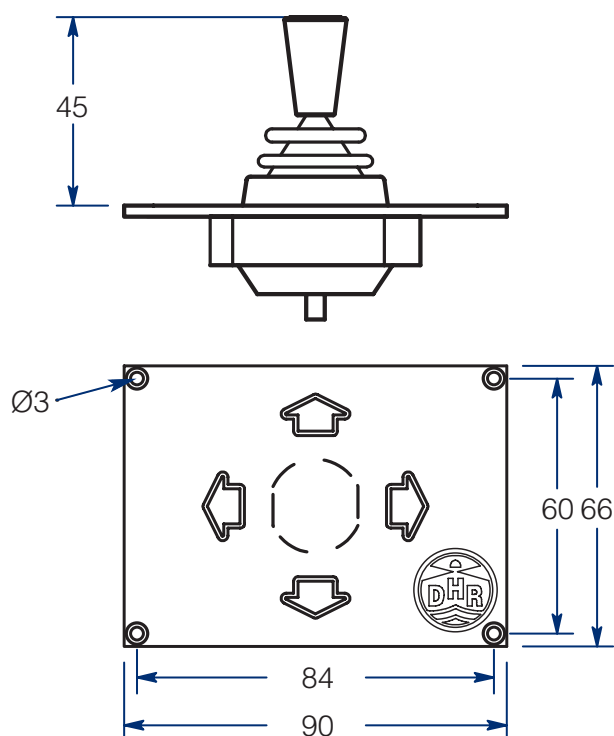


3. DIMENSIONS

Control Panel

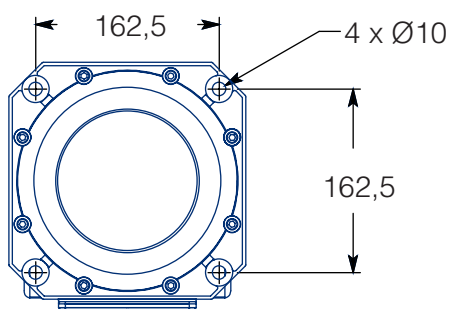
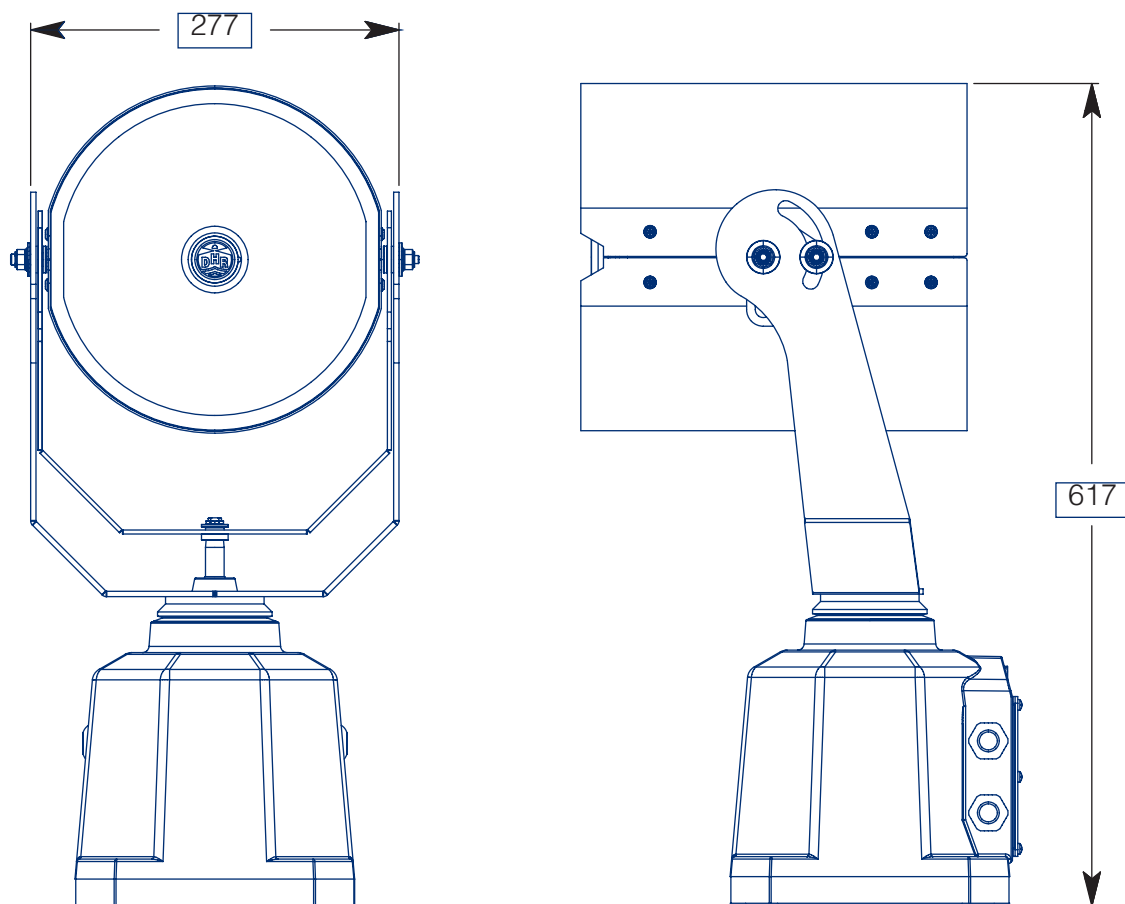


Joystick



All sizes are in mm.

Searchlight

**Base RCN**

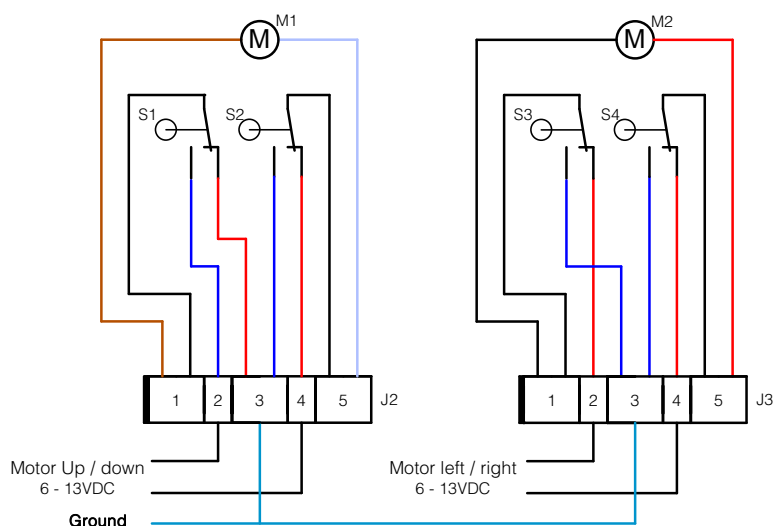
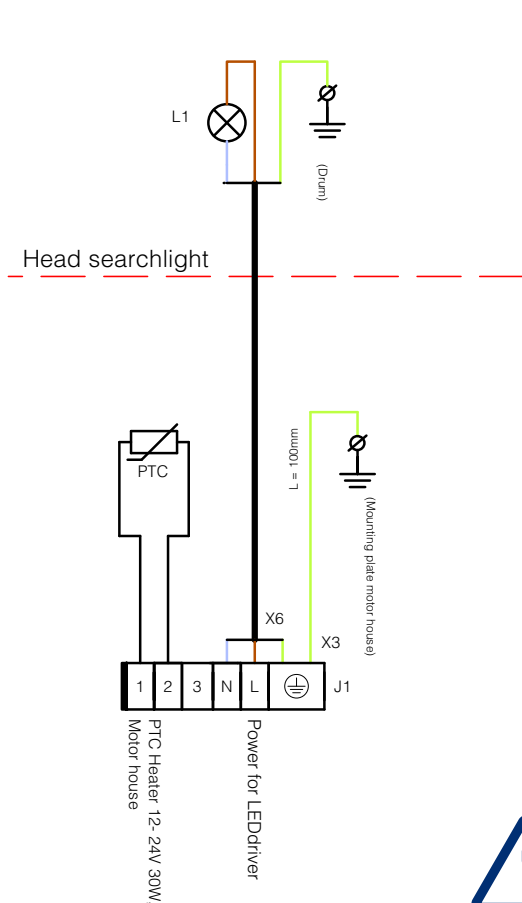
All sizes are in mm.

4. PHOTOS



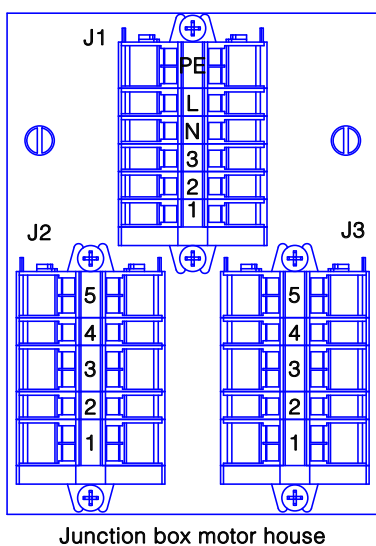
5. WIRING DIAGRAMS

A. Internal Connections



CAUTION:

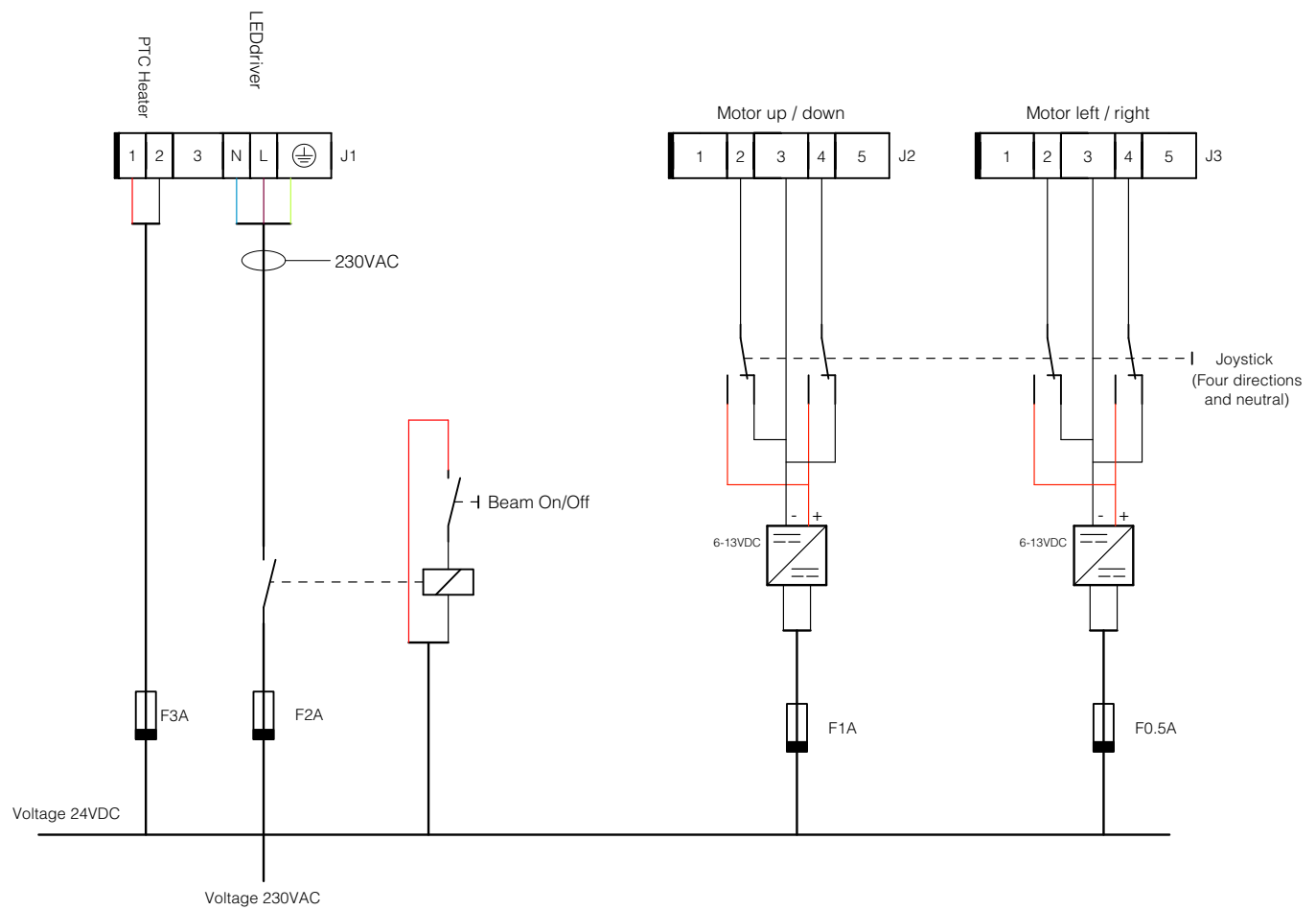
Ground is used as return pad when on the end-position switch. Always use the ground from the control panel to avoid unwanted potential differences.



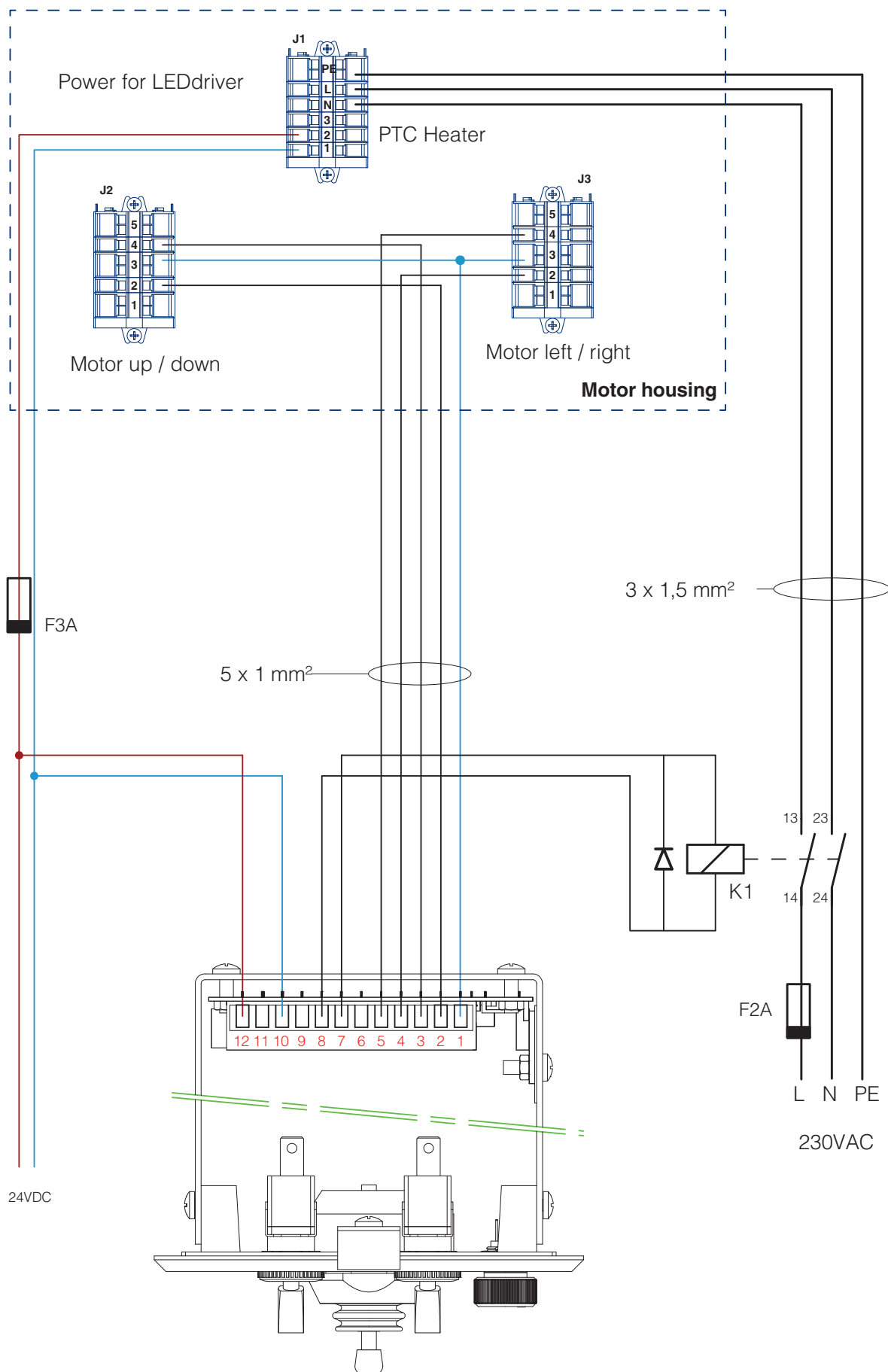
Terminal	Pole	Motor 1	Motor 2
J2-2	+	Down	-
J2-3	Ground		
J2-4	-		
J2-2	-	Up	-
J2-3	Ground		
J2-4	+		
J3-2	+	-	Left
J3-3	Ground		
J3-4	-		
J3-2	-	-	Right
J3-3	Ground		
J3-4	+		

Component	Description
S1, S2, S3, S4	Microswitch V3 with roller lever, IP67 sealed
L1	Halogen lamp
J2, J3	Terminal block 5 way - Motors
J1	Terminal block 6 way - Mains
PTC	PTC heater 12-24V 30W (self-regulating)
M2	Motor 12VDC/6W, gearhead 1:100 (right / left)
M1	Special spindle Motor 25W (up / down)
X6	Head resisting cable 3 x 1,5 - 1,25 m
X3, X4, X5	Mounting wire 1,5 mm ² , green/yellow (earth)

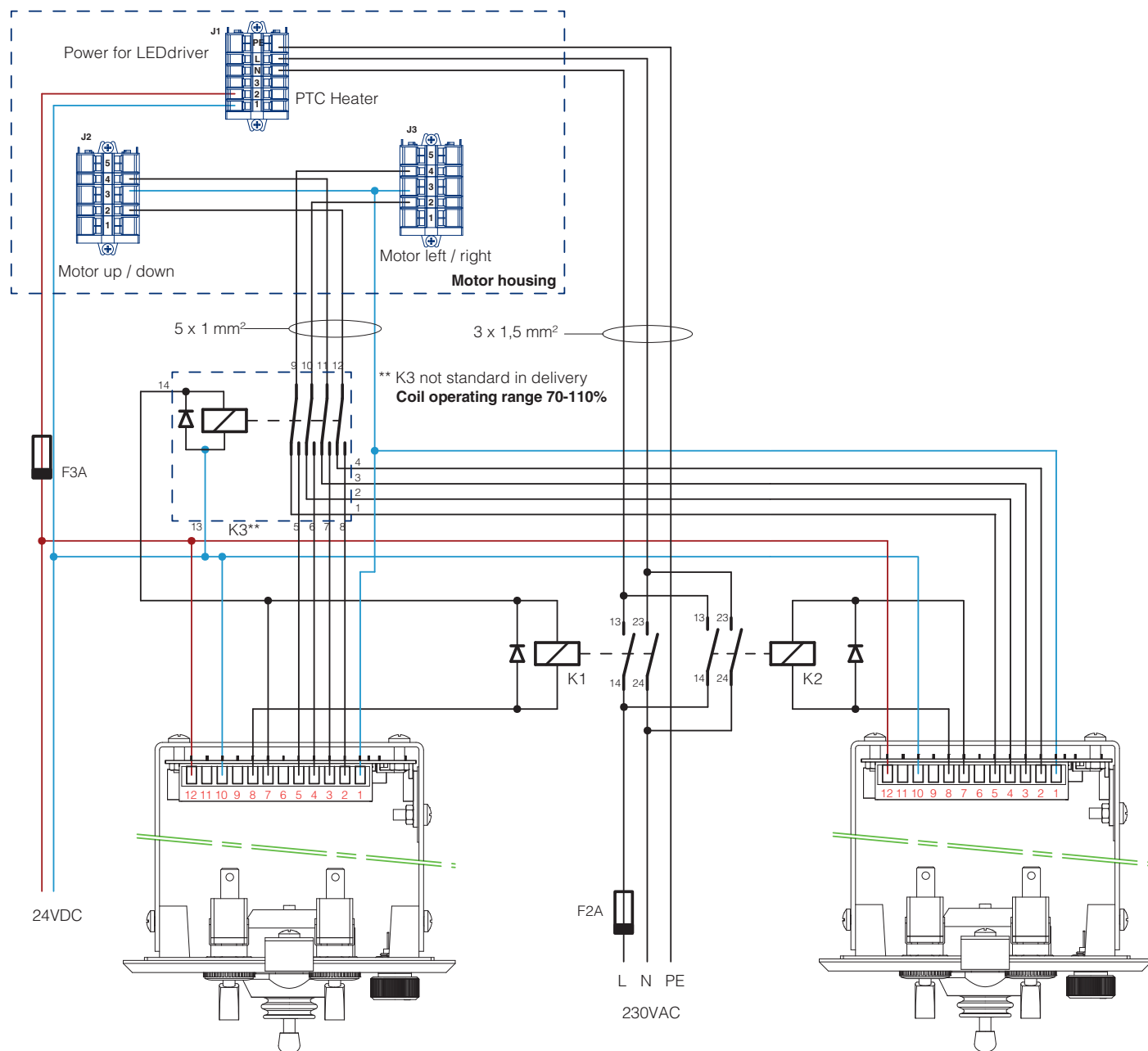
B. External Connections



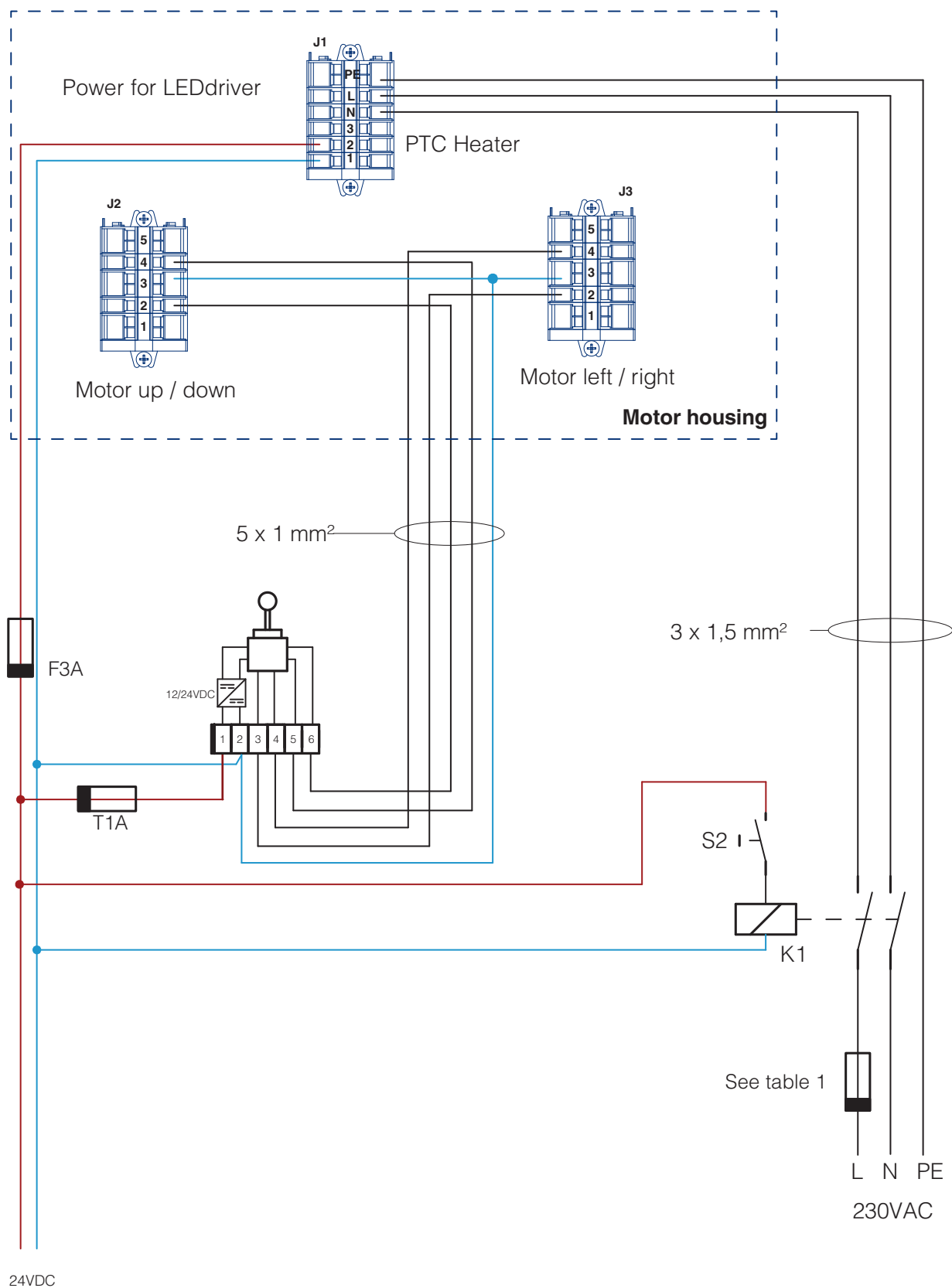
C. Control panel



D. Dual control panel



E. Joystick



6. MAINTENANCE AND CORRECT USE



Safety notes

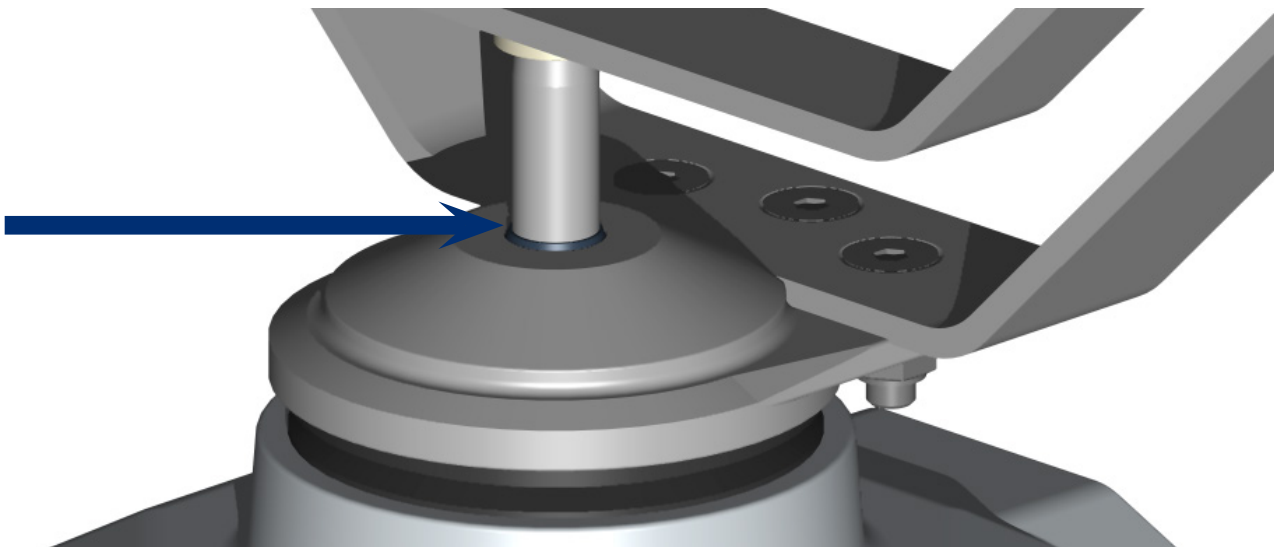
- Handle with care
- Turn off main power
- Warning, lamp is hot

Tips for correct use

- Do not overheat the searchlight - max. burning time 20 min.
- Switch off the searchlight immediately after use, this increases the life expectancy of the bulb
- Do not light-up objects closer than 2 metres
- Clean the searchlight regularly with water
- Do not point the light beam at the eyes of humans or animals

Preventive maintenance

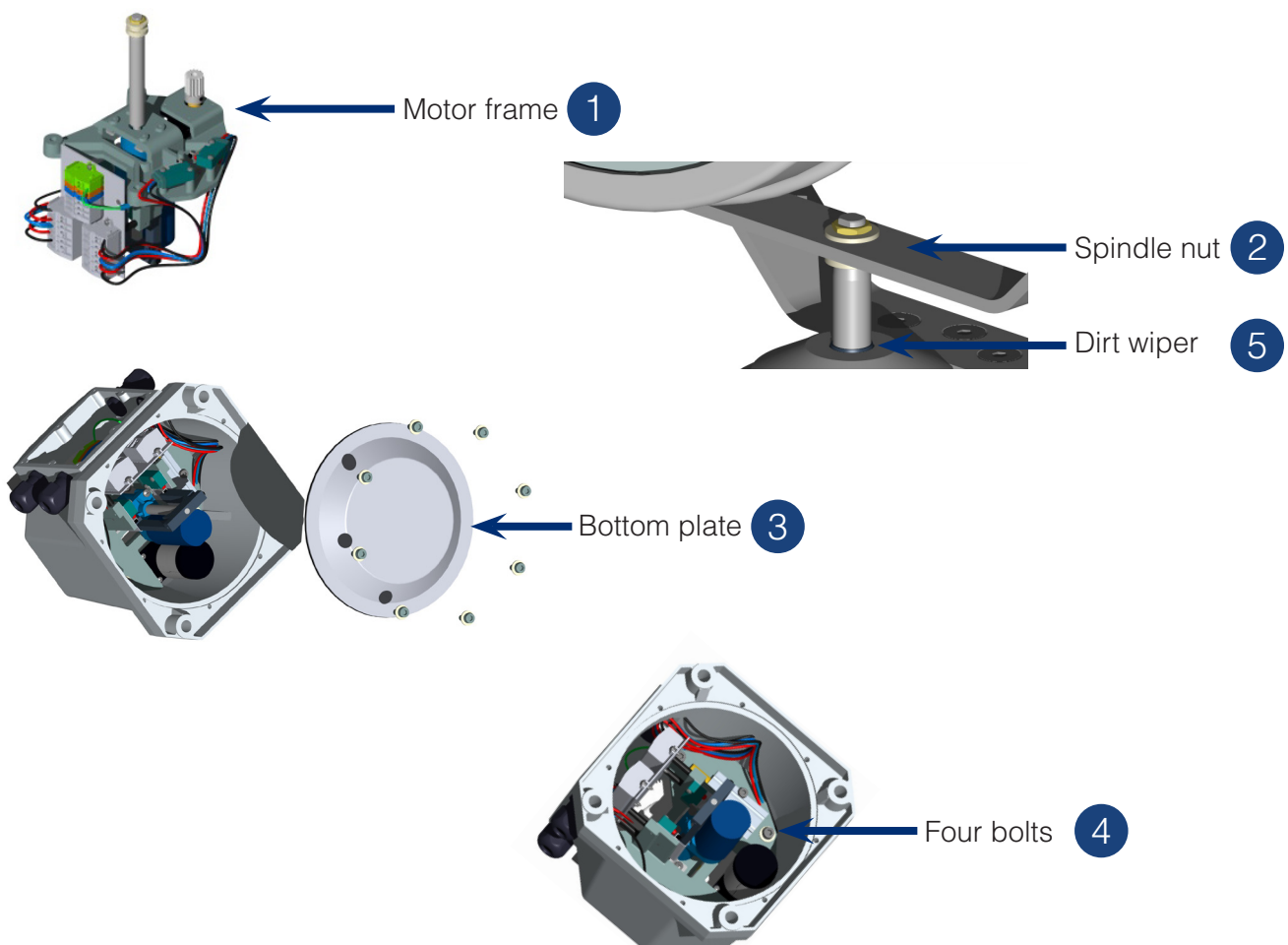
Clean the searchlight with clean water regularly. Do not use any aggressive cleaning agents. At least twice a year rub the dirt wiper, on top of the motor housing (see drawing below), in with silicone grease.



7. REPLACING OF MOTOR FRAME

Motor frame replacement

1. Switch off the main power
2. Open the backplate of the motor housing
3. Disconnect the power cables connected to the motor frame ①
4. Unscrew the four (4) bolts to dismount the searchlight from the base structure
5. Unscrew the spindle nut ②
6. Tilt the searchlight vertically
7. Disassemble the bottom plate ③
8. Unscrew the (4) bolts and carefully remove the defective motor frame ④
9. Slowly insert the new motor frame in the motor housing.  **Be careful** not to damage the dirt wiper located on top of the motor housing ⑤
10. Before fixing the (4) bolts of motor frame, the following steps should be taken:
 - A. Reconnect the power cables
 - B. Turn the motors left/right and up/down using the controls. This is necessary to settle the motor frame inside the motor housing
11. Close the motor housing by mounting the bottom plate
12. Reposition the searchlight and mount it on the base structure
13. Fasten the spindle nut.  **Do not overtighten it!**
14. Test the searchlight both in vertical and horizontal directions to ensure that the searchlight is functioning properly
15. Searchlight is ready for use



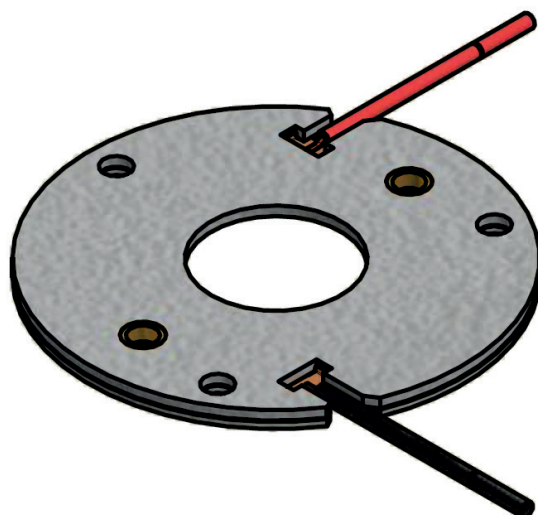
8. RECOMMENDED SPARE PARTS

Spare Part

No	Description	Order code
1	COB led	CLU-731
2	Lampholder COB led	471
3	LED-driver 230V/70W	ELG-75-42
4	Mirror reflector 230	
5	Front glass 230	
6	Motor frame	35025
7	Control Panel	PAN2011
8	Joystick	JOY2011



1



2

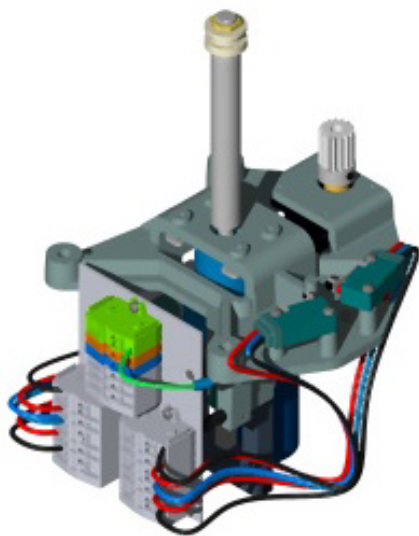


2



4

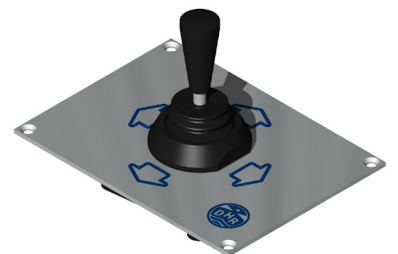
5



6



7



8



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ADVANCED MARITIME SIGNALLING SOLUTIONS



Den Haan Rotterdam
Fascinatio Boulevard 1182
2909 VA Capelle a/d IJssel
The Netherlands
T +31 (0) 10 413 07 55
E sales@dhr.nl
www.dhr.nl