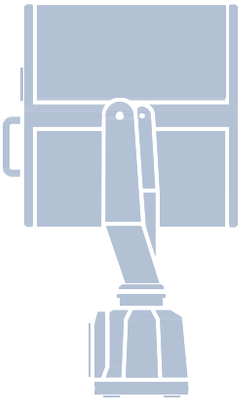
TECHNICAL MANUAL

420RCB Searchlight and Control System



SINCE 1922

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 company respected 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.

With the addition of the brand new 420RCB searchlight, DHR completes her line of searchlights with a product designed for heavy duty applications. A perfect solution for tugs, workboats, cargo vessels or even larger inland vessels, this type of searchlight is easy in use and made for the job. Installation is straight-forward, due its well-thought mechanical and electrical design. As it is the feather-weight among the competition, positioning and mounting of the 420RCB will be done in an instant. The effort of any maintenance actions, is reduced to a minimum

DHR believes that the 420RCB-series certainly adds value to the shipowner. An impressive optical system in combination with a robust and compact design, makes it a unique, distinctive and high-quality searchlight.

DEN HAAN ROTTERDAM B.V.

D.M. Den Haan
Managing Director

QUALITY STANDARDS

- Excellent Optics
- Maintenance Friendly
- Remote Focus Control
- Light Weight Construction
- IP66 Water Ingress Protection

IP 66

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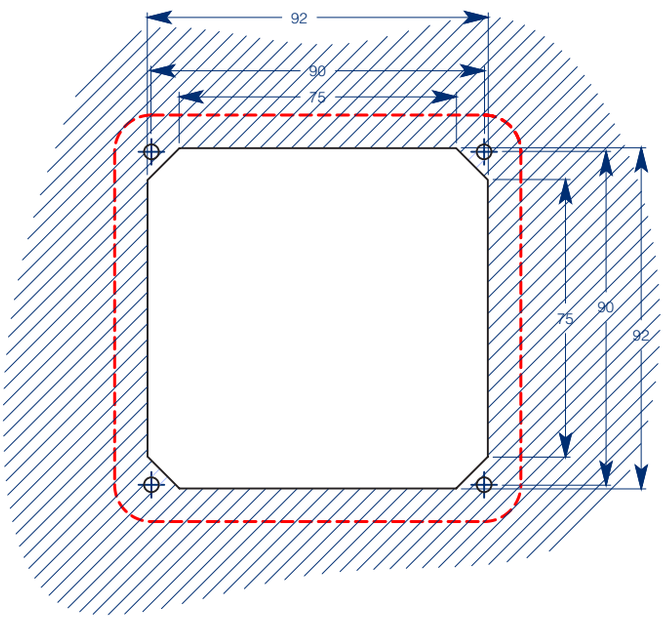
1. MOUNTING INSTRUCTIONS

Warning!
Den Haan Rotterdam accepts no responsibility for any damage if the searchlight is installed incorrectly and/or used improperly. When in doubt consult a qualified electrical technician.

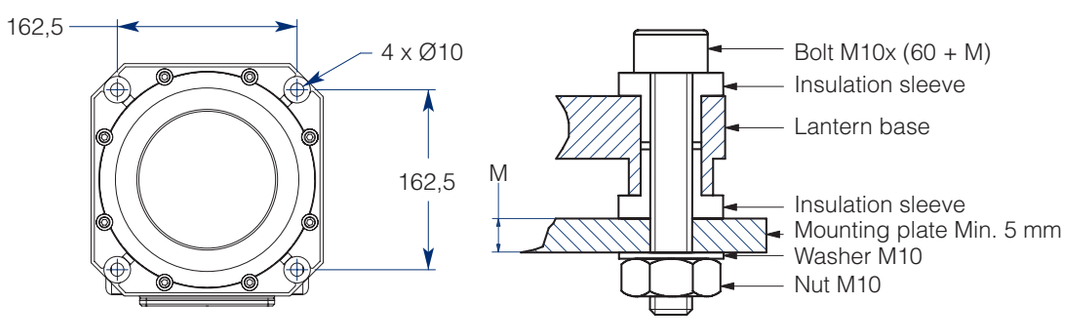
Mounting the panel

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 below.
The minimum space needed behind the panel is 60 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

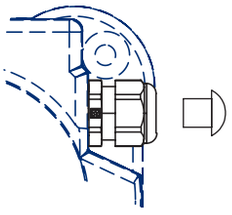
- The permissible torque should be 8 Nm
- Use only A4-grade stainless steel

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.

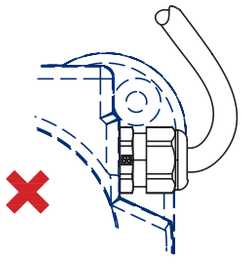
Electrical installation

Install the electrical wiring according to the wiring diagrams showing at 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.

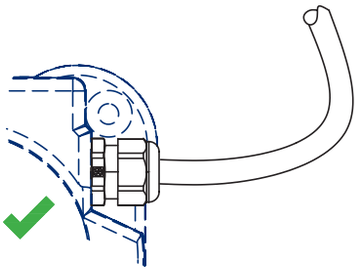
Cable glands



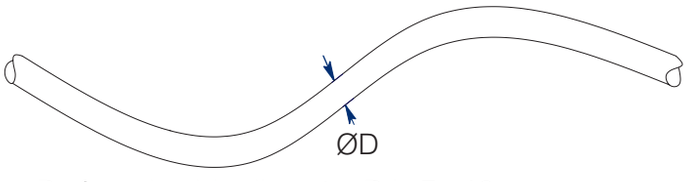
Remove the plug before placing the cable.
If no cable is connected leave the plug in place!



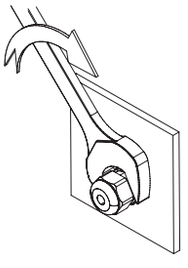
Cable too tight!
This gives unwanted stress at the sealing of the cable gland and water ingress will occur.



Include cable slack at the entering point of the cable gland



Preferred cable diameter D is 7 - 12 mm



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. MAINTENANCE

Safety notes

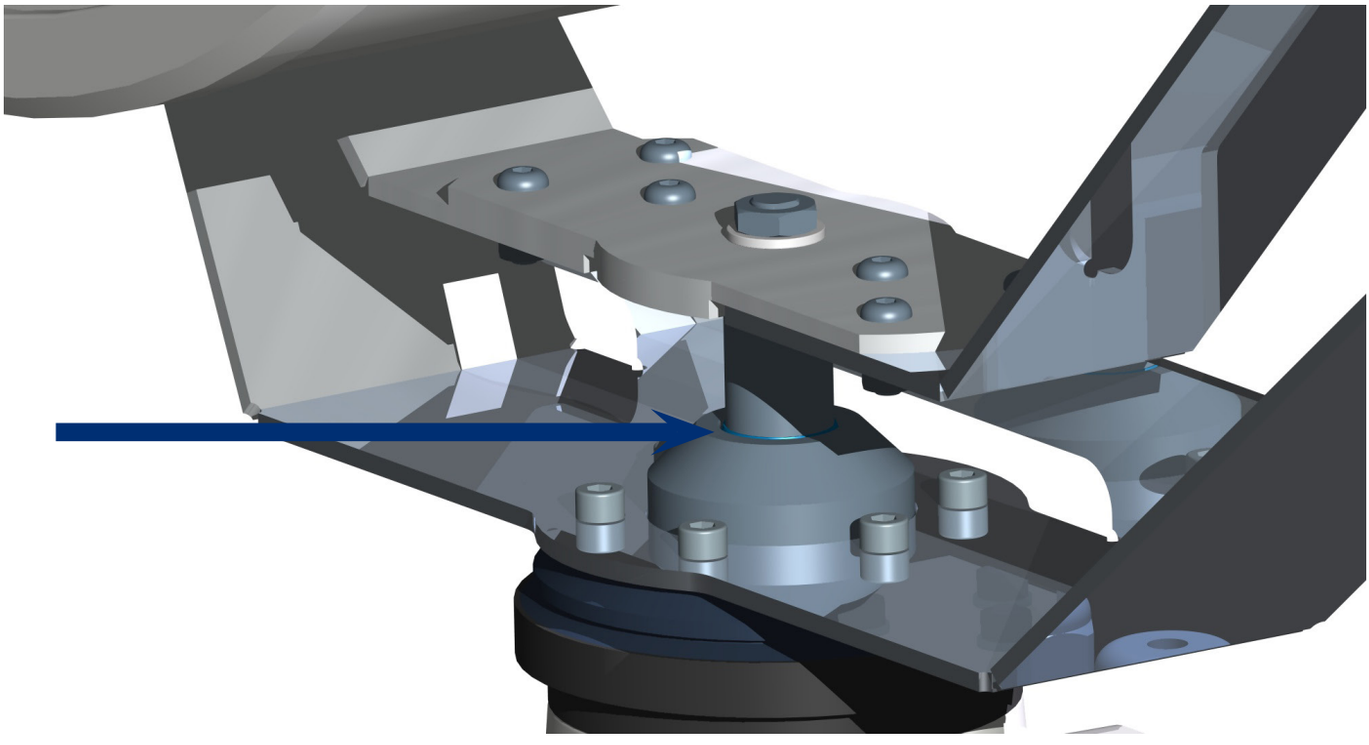
- Handle with care
- Turn off main power
- Warning, lamp is hot
- Do not touch the lamp with bare hands

Lamp replacement

1. Switch off the main power
   Caution – hot lamp. Let the lamp cool down for at least 10 minutes before proceeding maintenance.
2. Open de back lid by turning the four quarter turn latches to the right
3. Slide the mirror bracket out the drum
4. Remove the lamp from the lampholder
5. Ensure that the replacement lamp is of the same type
6. Take a clean cloth to place the new lamp in the lampholder
   Do not touch the lamp with bare fingers, remove any fingerprints with a cloth and alcohol and rub it dry
7. Close the drum
8. The searchlight is ready for use

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.



3. SPECIFICATIONS

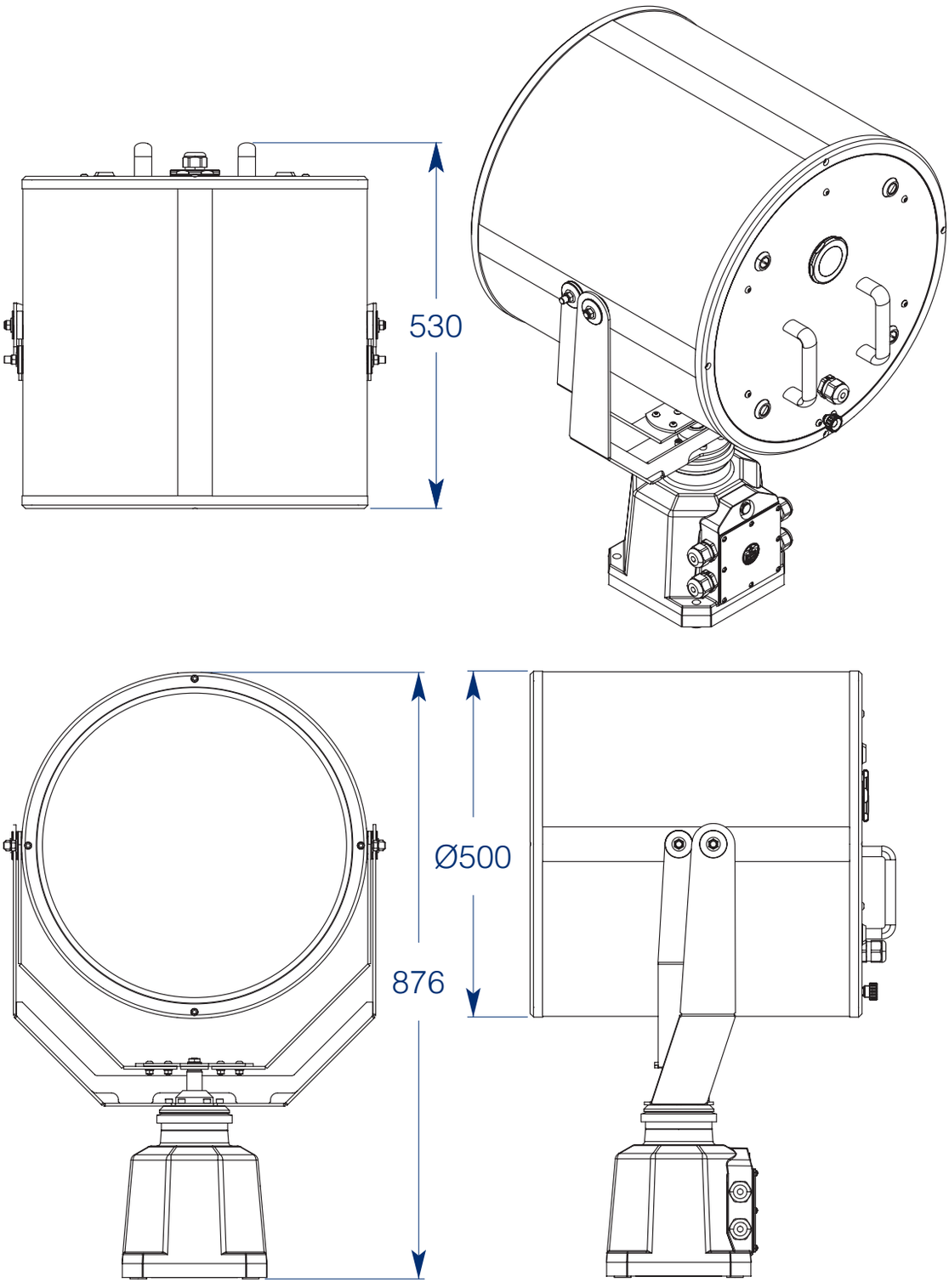
Searchlight

Model	DHR420 Remote control
Dimensions	
Height	876 mm
Width	530 mm
weight	30 kg
Electrical	
Lamp voltage	230 VAC
Lamp wattage	2000 Watt
Control voltage	24 VDC
Preferred cable type	H07RN-F
Cable diameter	Ø 6-12 mm
Optics	
Mirror	Parabolic mirror reflector Ø 420 mm
Range	1225 m
Focus (Beam angle at 50%)	From 6,5 ° up to 20°
Luminous intensity	1.500.000 cd
Bulb	
Model	Osram 64788 CP/72
Luminous flux	52.000 lm
Rated lamp voltage	230/240 V
Rated lamp wattage	2000 Watt
Average life-time	400 h
Color temperature	3200 K
Base	GY16
Heater	
Type	PTC-heater
Voltage	24VDC
Maximum wattage	70 W
Motor Unit	
Tilt	+ 20° / - 25°
PAN	340°
Speed left / right approx.	16 or 32°/ sec
Speed up / down approx.	1,6 or 3,2° / sec
Housing	
Material	Chromated seawater resistant aluminium
Finish	UV resistant powder coating - White RAL9016
Front glass	Hardened glass
Sealings	Silicone / Neoprene, black
Cable gland	M25x1.5
Operating temperature	- 25° / + 40° C
Ingress protection class	IP66 c/w Membrane vent

Control panel

Model	PAN2016
Dimensions	
Depth	110 mm
Width	110 mm
Weight	0,25 kg
Electrical	
Voltage	24 VDC
Maximum wattage	5 W
Fuse (2x)	T5A
Electrical insulation class	III
Housing	
Front	Aluminium, anodized
Operating temperature	0° / + 40° C

4. DIMENSIONS SEARCHLIGHT

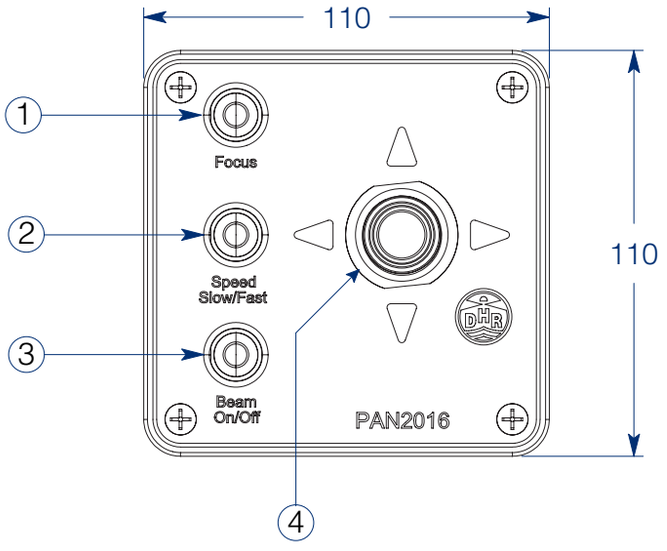


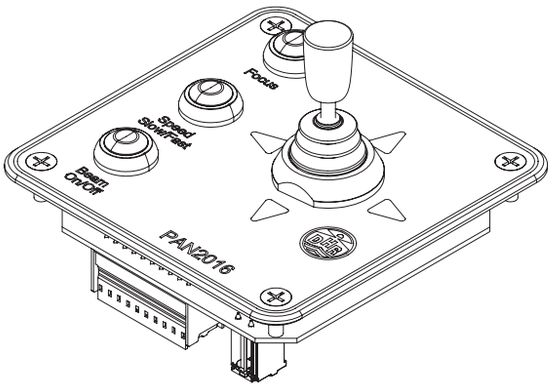
All dimensions are in mm.

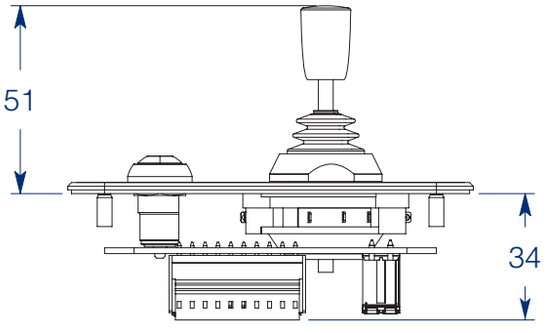
5. PHOTOS SEARCHLIGHT

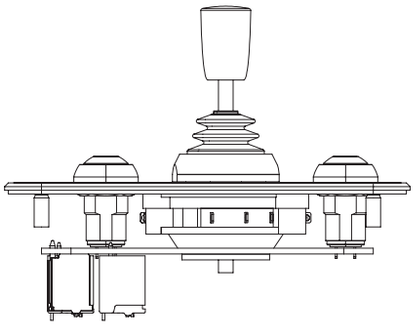
DEN HAAN ROTTERDAM

6. DIMENSIONS CONTROL PANEL









All dimensions are in mm.

Controls

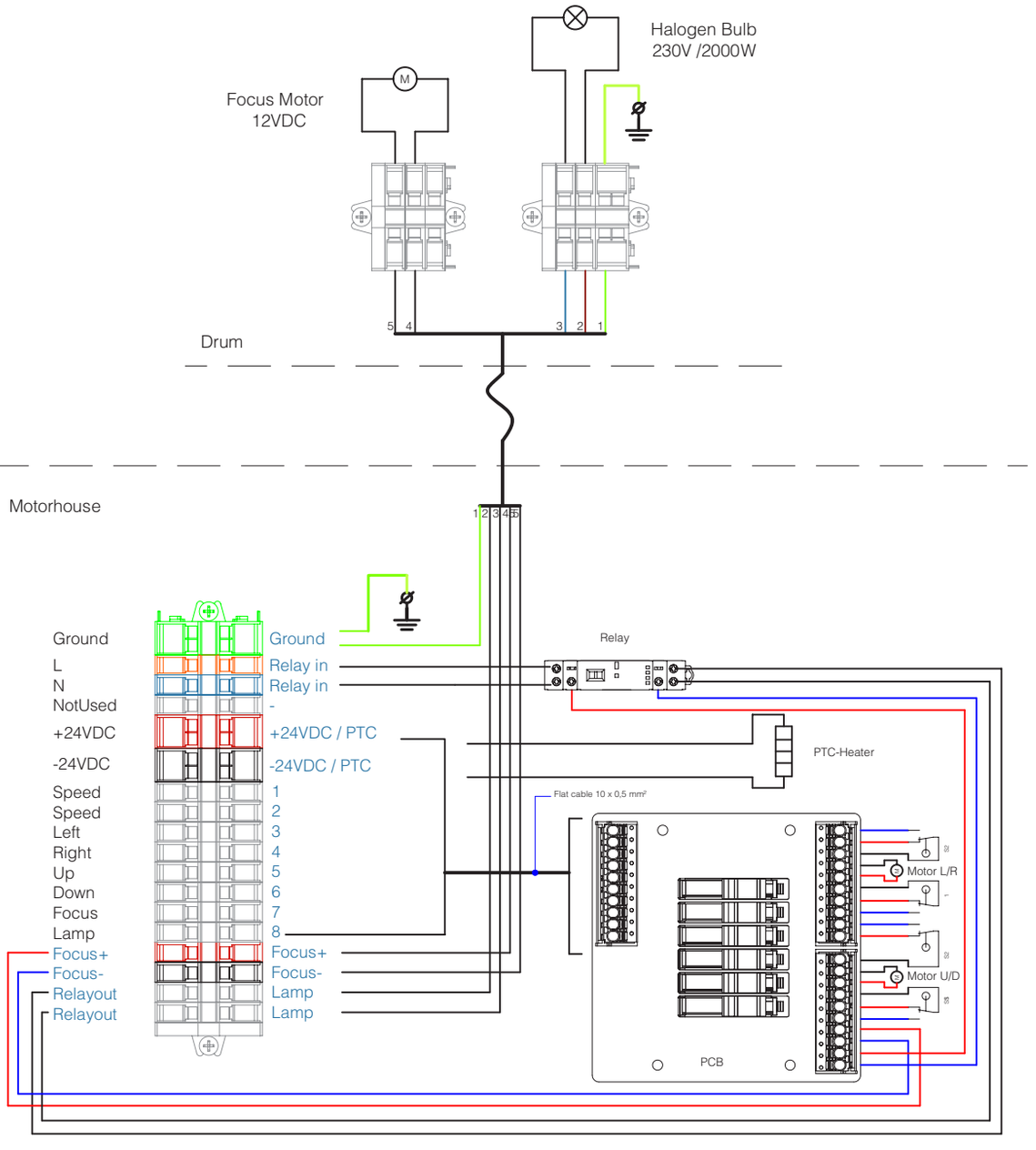
1. FOCUS, controls with Joystick position lamp.

2. SPEED, 50% or 100%

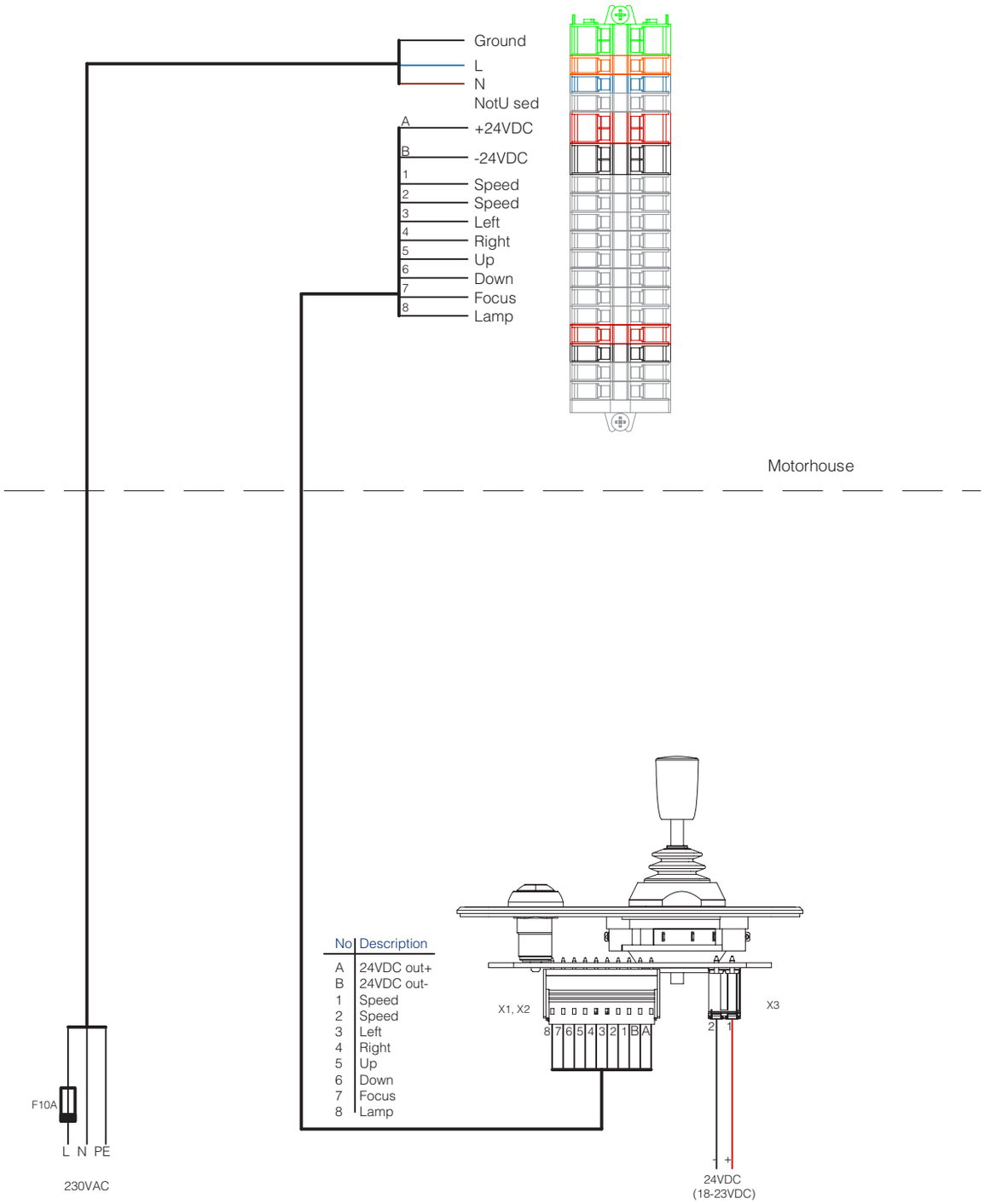
3. BEAM ON/OFF, switches the lamp on or off.

4. JOYSTICK, controls the direction of the movement.

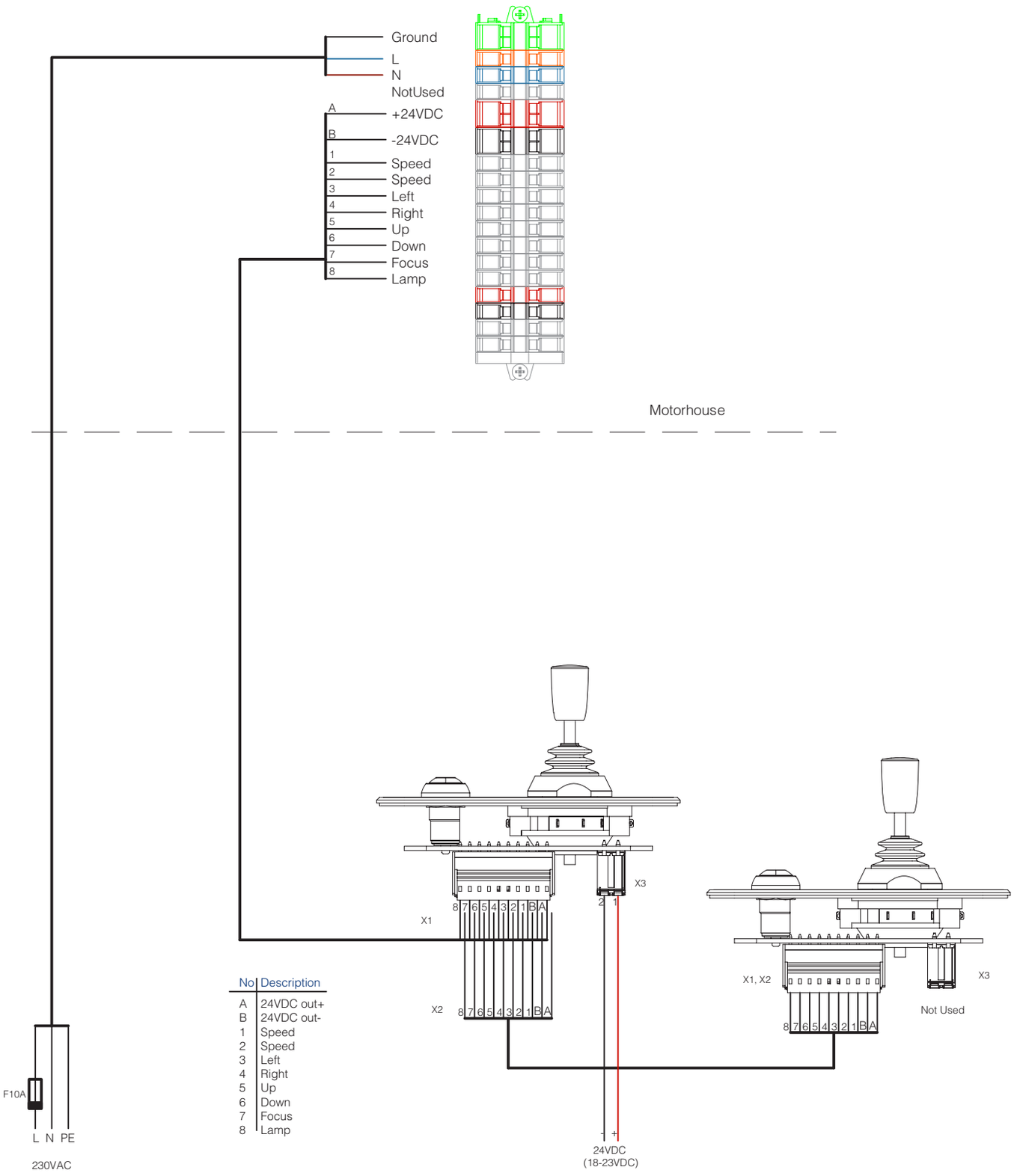
7. WIRING DIAGRAM SEARCHLIGHT



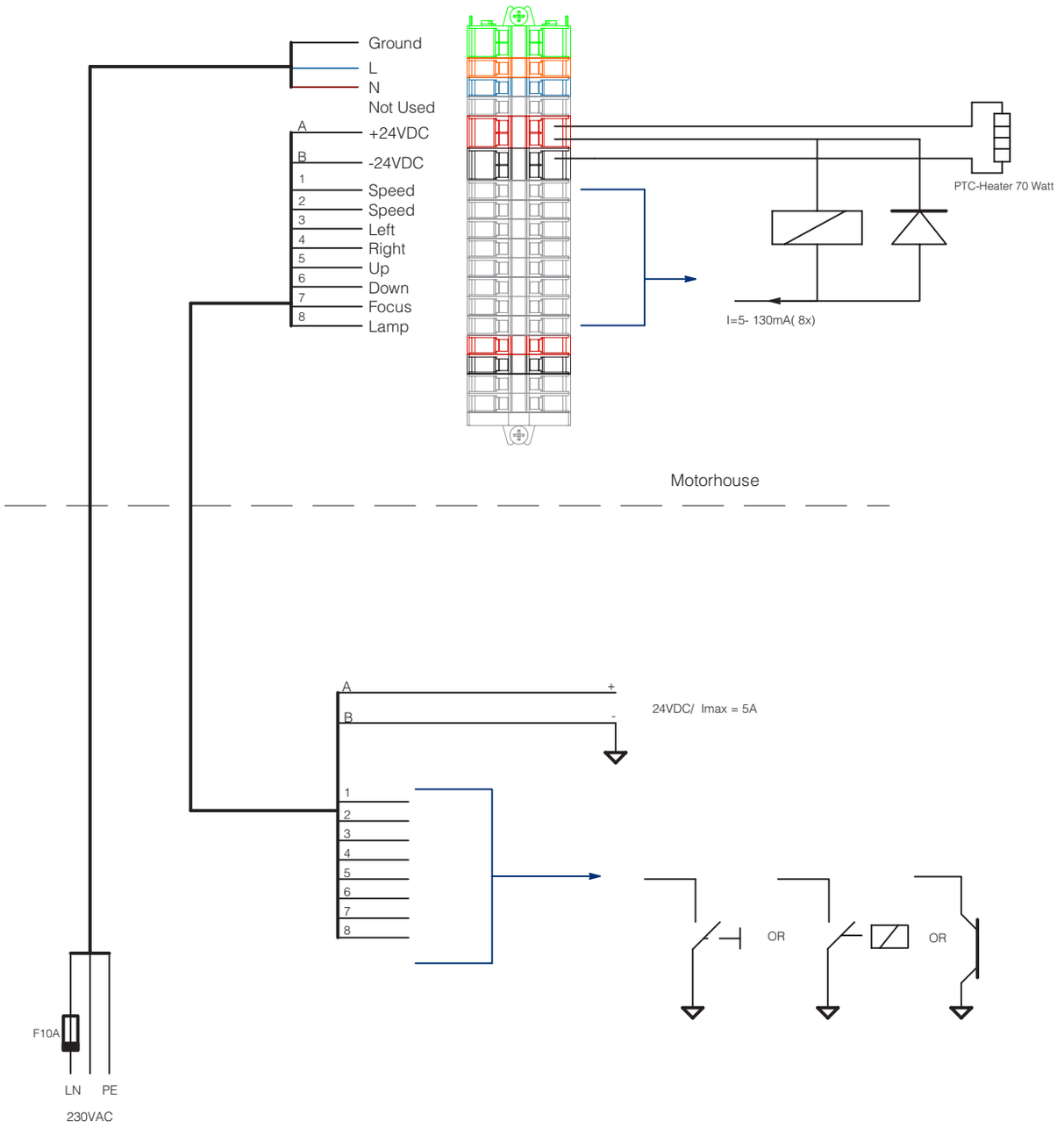
8. WIRING DIAGRAM CONTROL PANEL



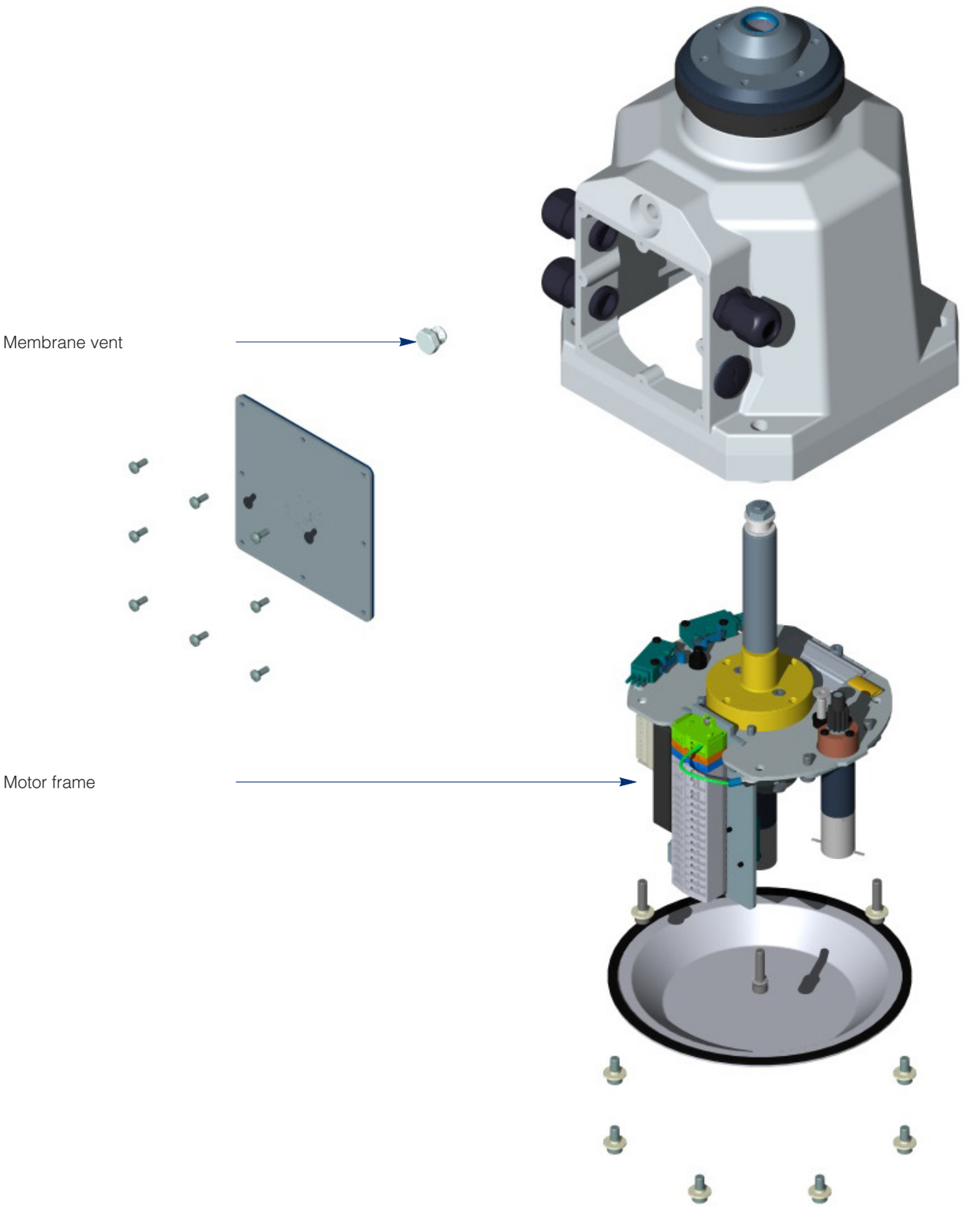
9. WIRING DIAGRAM DUAL CONTROL PANEL



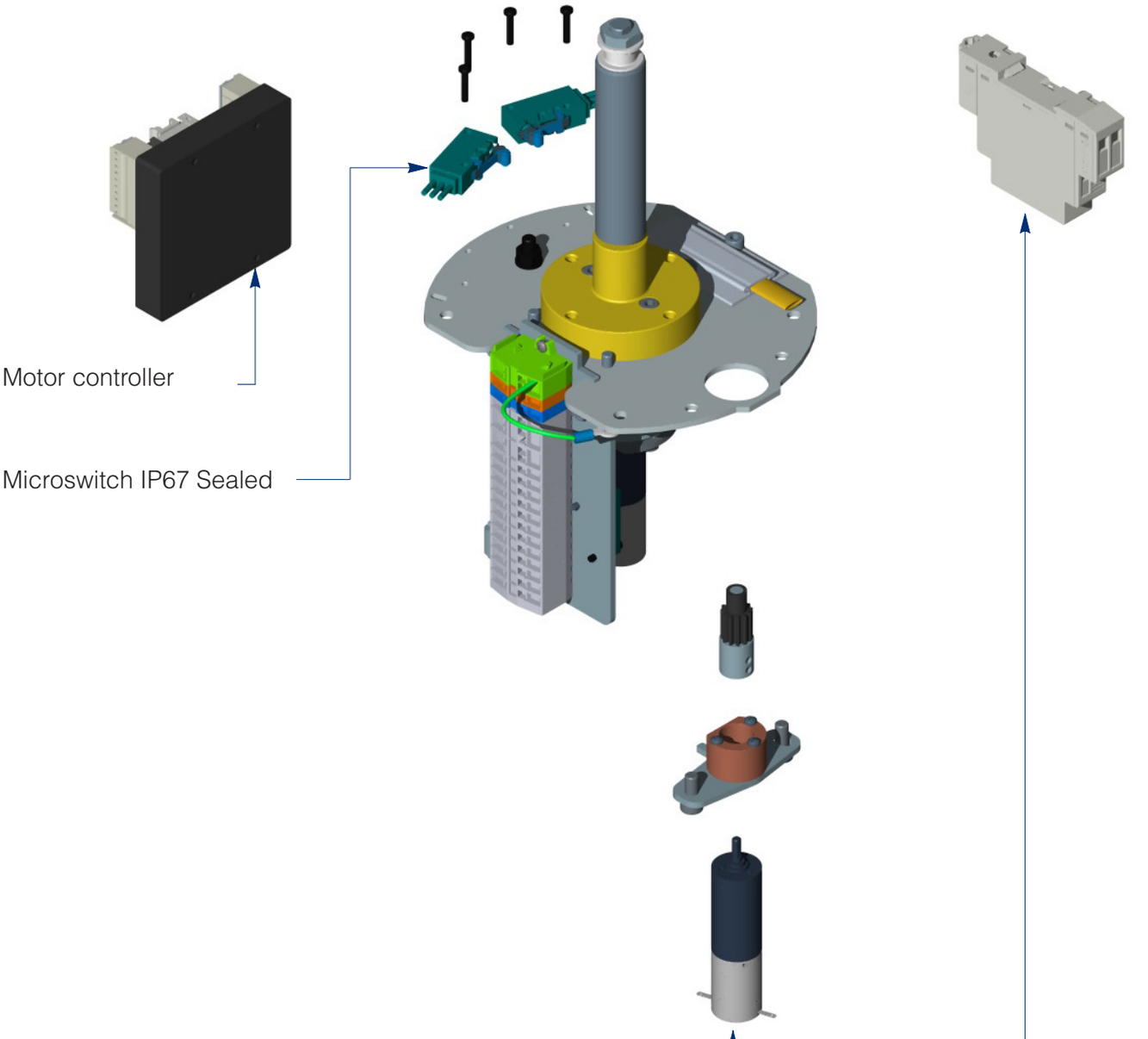
10. WIRING DIAGRAM SWITCHES / DIGITAL



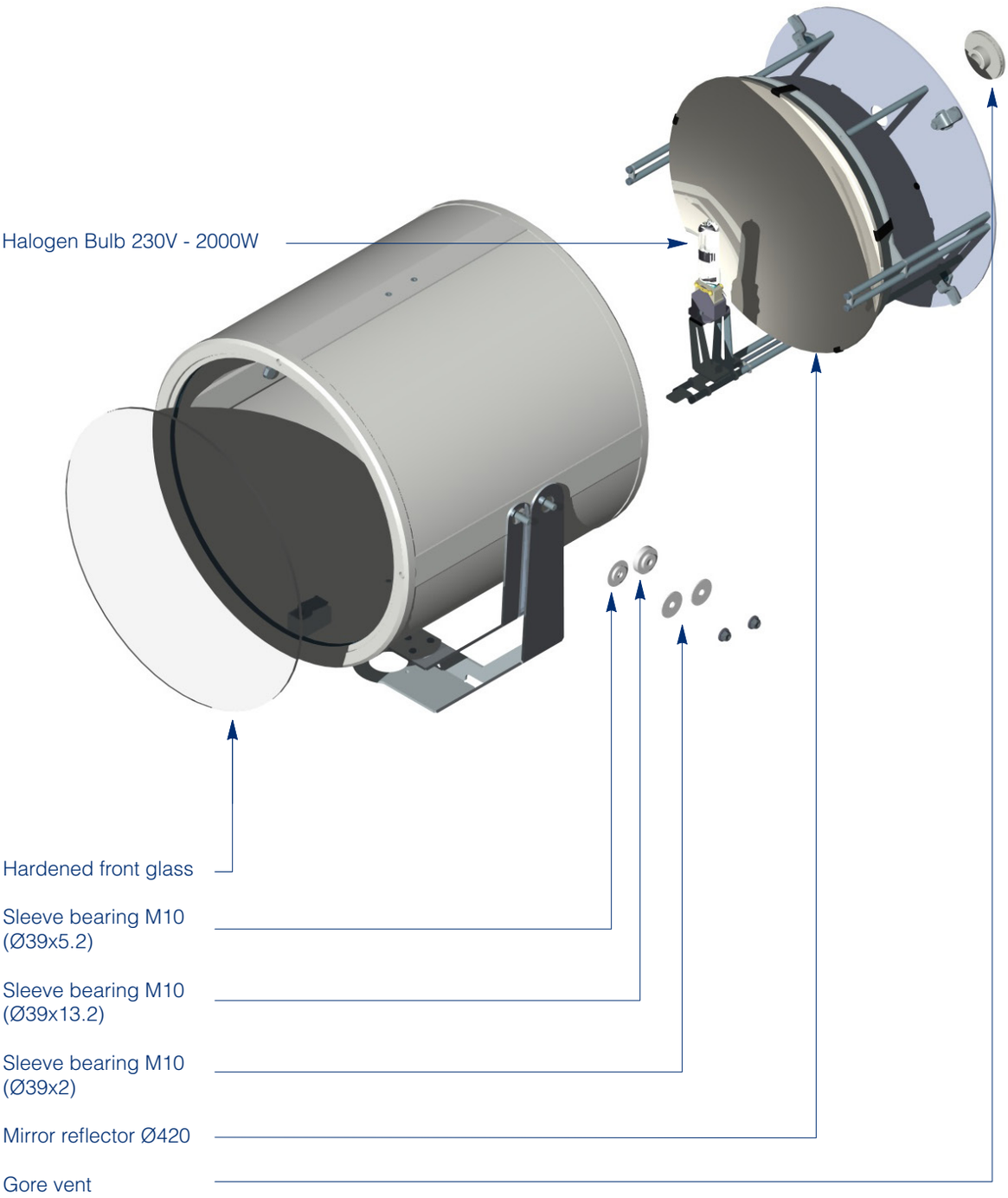
11. SPARE PARTS MOTOR HOUSING



12. SPARE PARTS MOTOR FRAME



13. SPARE PARTS DHR420 HEAD



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