TECHNICAL MANUAL

RCN Searchlight and Control System



SINCE 1922

Den Haan Rotterdam

Version 2.2 Aug 2016

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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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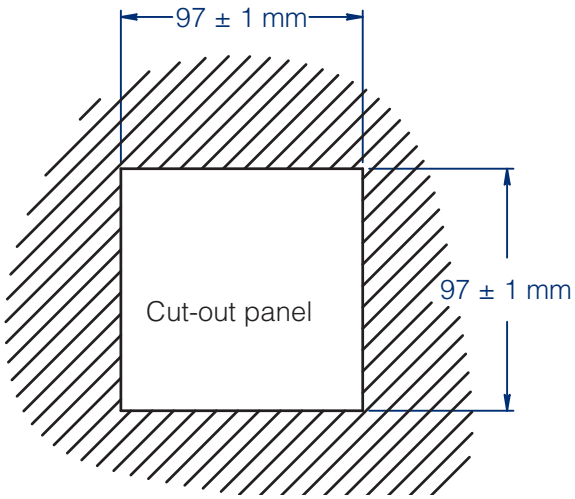
1. MOUNTING INSTRUCTIONS

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

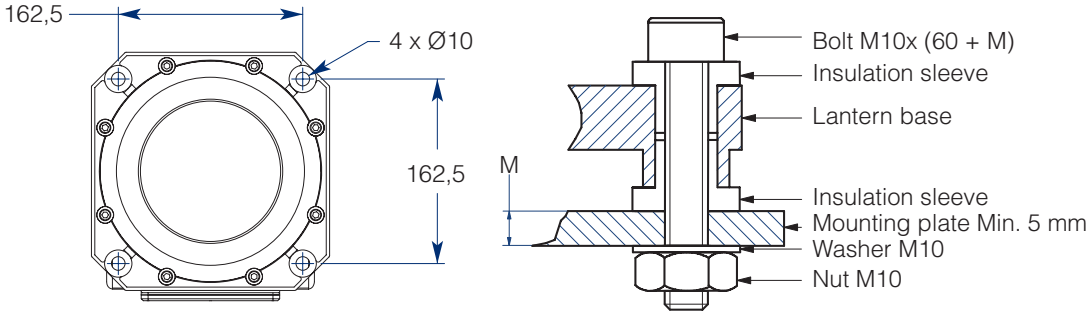
Place the control panel inside the wheelhouse, where it is protected against weather influences. The housing is especially constructed to be flush mounted in an instrument cabinet according the illustration on the right.

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

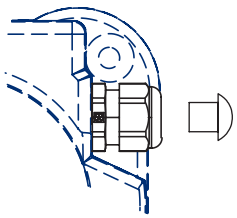
- The permissible torque should be 8 Nm
- Use only A4-grade stainless steel

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.

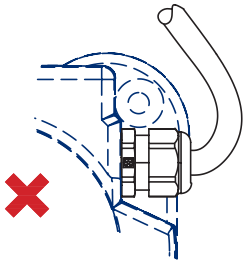
Electrical installation

Install the electrical wiring according to the wiring diagrams 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.

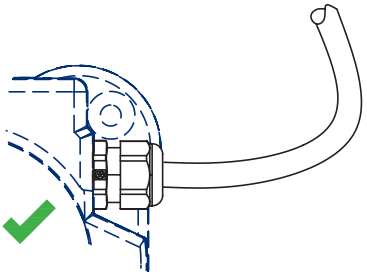
Cable glands



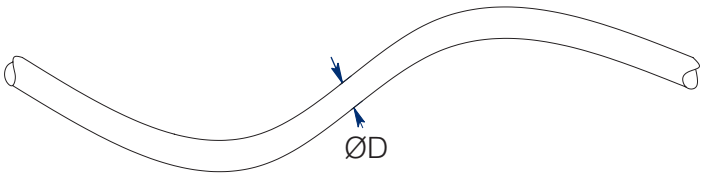
Remove the plug before placing the cable.
If no cable is connected leave the plug in place!



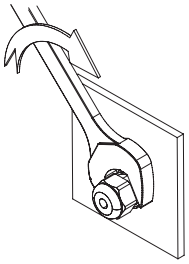
Cable too tight!
This gives unwanted stress at the sealing of the cable gland and water ingress will occur.



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

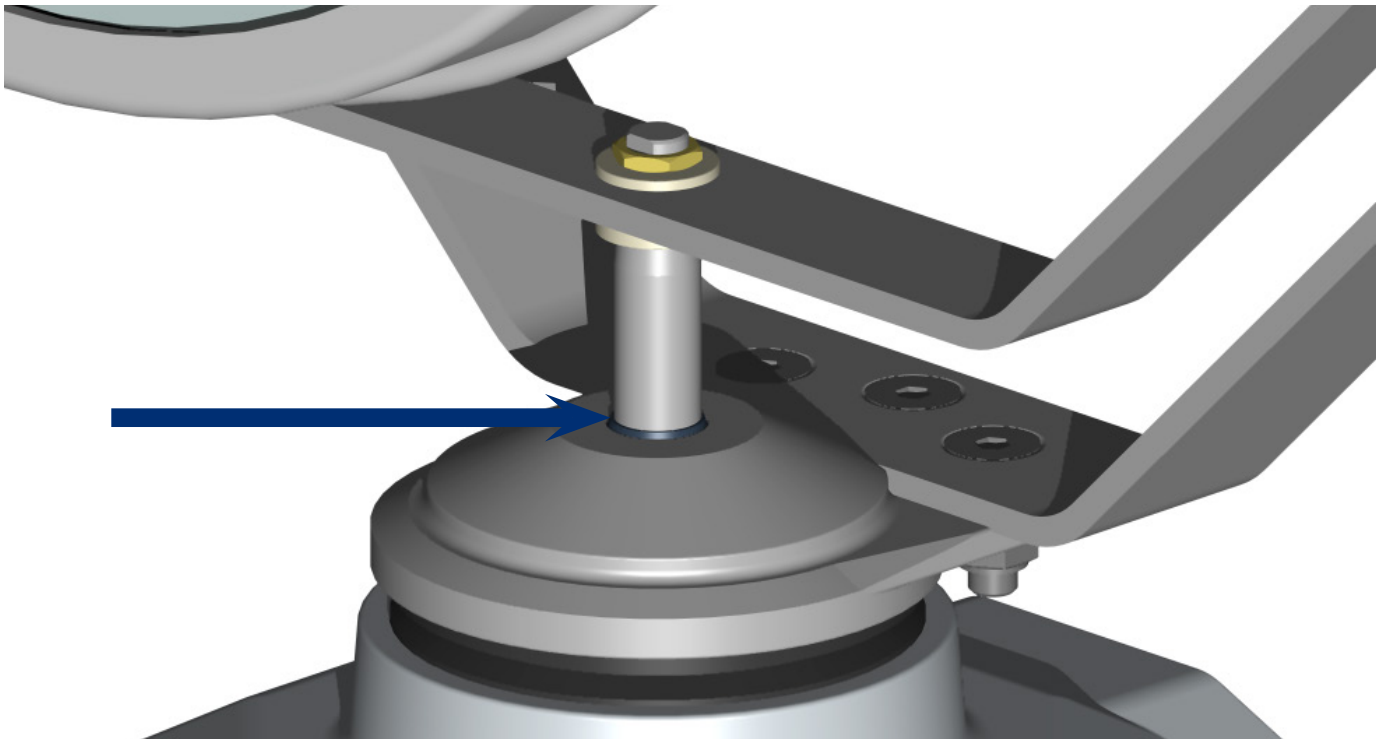
- Handle with care
- Turn off main power
- Warning, lamp is hot
- Do not touch the lamp with bare hands

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 the drum
3. Remove the lamp from the lampholder
4. Ensure that the replacement lamp is of the same type
5. 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
6. Check the neoprene sealing of the front glass and rub it in with talcum powder
7. Close the drum
8. The searchlight is ready for use

Preventive maintenance

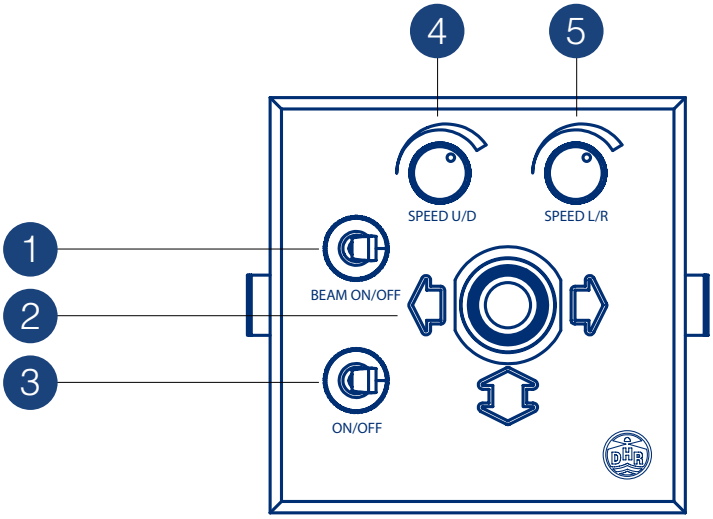
Clean the searchlight with clean water regularly. Do not use any aggressive cleaning agents. At least twice a year rub the dirt wiper, on top of the motor housing (see drawing below), in with silicone grease.



3. SPECIFICATIONS

Control panel

Model	PAN2016
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

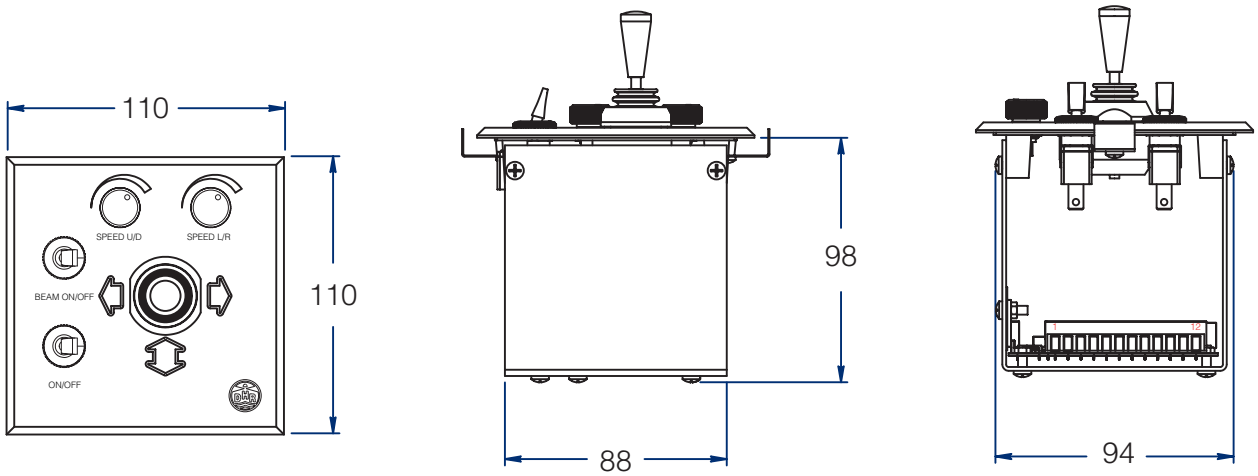
Model	210RCN220	210RCN110	210RCN024	220RCN220	22RCN024
Dimensions					
Height		570 mm		571 mm	
Width		218 mm		214 mm	
Weight		10 Kg		9,6 Kg	
Electrical					
Lamp voltage	230 VAC	115VAC	24VDC	230VAC	24VDC
Motor voltage			6-13 VDC		
Preferred cable type			H07RN-F		
Cable diameter			Ø 6-12 mm		
Optics					
Mirror		Sealed beam lamp		Aluminium Reflector	
Range	630 m	630 m	700 m	345 m	700 m
Adjustable Focus	No	No	No	No	No
Beam angle at 50%	12° x 9°	12° x 6°	7° x 8°	9,5° x 7,5°	5,5° x 3°
Luminous intensity	352.000 cd	400.000 cd	500.000 cd	120.000 cd	500.000 cd
Bulb					
Model	CP60	FNN	GE4552	64516	64657 HLX
Luminous flux	-	-	-	7400 lm	9000 lm
Rated lamp voltage	240 V	120 V	28V	230 V	24 V
Rated lamp wattage	1000 W	1000 W	250 W	300 W	250 W
Average life-time	300 h	800 h	25 h	75 h	300 h
Color temperature	3200 K	3200 K	-	3150 K	-
Base	GX16D	GX16D	G53 (Screw Terminals)	G6.35	G6.35
Heater					
Type			PTC-heater		
Voltage			24VDC		
Maximum wattage			70 W		
Motor Unit					
Tilt			+ 25° / - 25°		
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 glass
Seals			Silicone / Neoprene, black		
Cable gland			M25x1.5		
Operating temperature			- 25° / + 45° C		
Ingress protection class Motor house			IP66 c/w Membrane vent		
Ingress protection class Head		IP X5			IP66 c/w Membrane vent

Searchlight

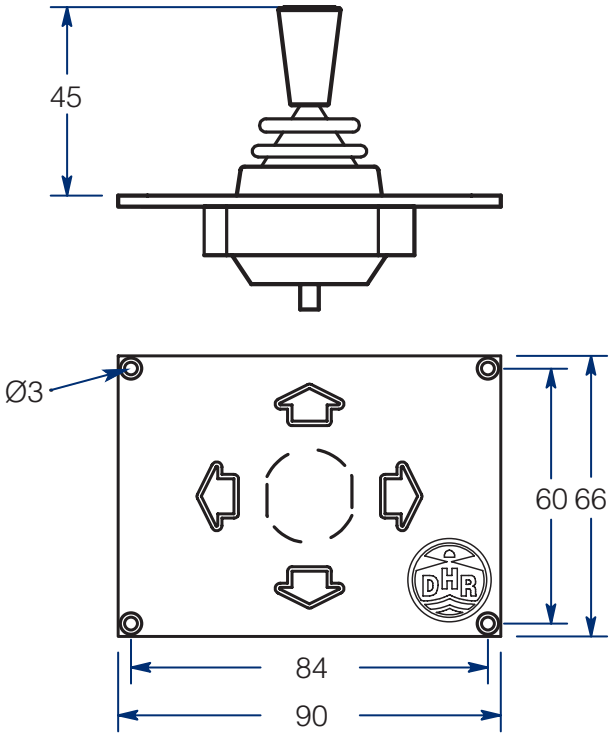
Model	260RCN220	260RCN024	350RCN220	350RCN110	35RCN024
Dimensions					
Height	685 mm			730 mm	
Width	306 mm			377 mm	
Weight	10,5 Kg	7,5 Kg		16,6 Kg	
Electrical					
Lamp voltage	230 VAC	24VDC	230VDC	115VAC	24VDC
Motor voltage			6-13 VDC		
Preferred cable type			H07RN-F		
Cable diameter			Ø 6-12 mm		
Optics					
Mirror	Parabolic mirror reflector Ø 260 mm		Parabolic mirror reflector Ø 420 mm		
Range	1100 m		1104 m	974 m	904 m
Adjustable Focus	Yes		No	No	No
Beam angle at 50%	3,5° x 2,5°		3,5° x 4°	3° x 4°	2,5° x 1,5°
Luminous intensity	1.200.000 cd		1.220.000 cd	950.000 cd	820.000 cd
Bulb					
Model	64657 HLX		6984P	GE - T11	64657 HLX
Luminous flux	9000 lm		22.500 lm	23.500 lm	9000 lm
Rated lamp voltage	24V		230 V	115/120 V	24 V
Rated lamp wattage	250W		1000 W	1000 W	250 W
Average life-time	300 h		180 h	750 h	300 h
Color temperature	-		3200 K	3050 K	-
Base	G6.35		GX 9,5	GX 9,5	G6.35
Heater					
Type	PTC-heater				
Voltage	24VDC				
Maximum wattage	70 W				
Motor Unit					
Tilt	+ 25° / - 25°				
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 glass				
Seals	Silicone / Neoprene, black				
Cable gland	M25x1.5				
Operating temperature	- 25° / + 45° C				
Ingress protection class Motor house	IP66 c/w Membrane vent				
Ingress protection class Head	IP66 c/w Membrane vent				

4. DIMENSIONS

Control Panel

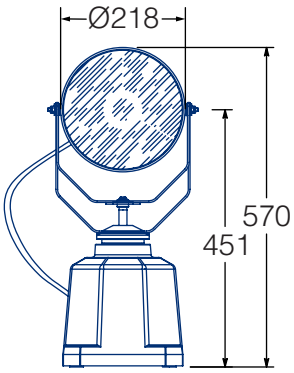


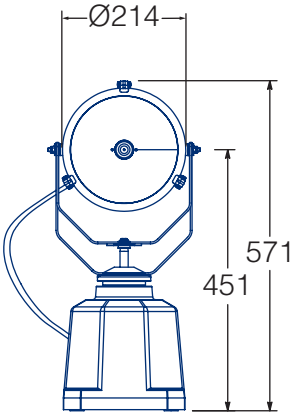
Joystick

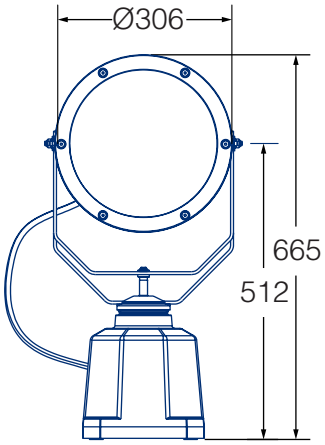


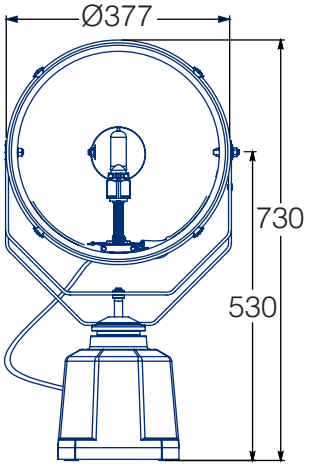
All sizes are in mm.

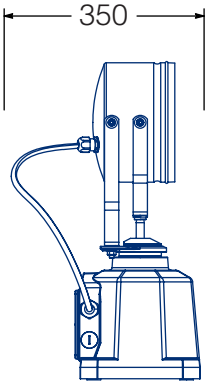
Searchlights



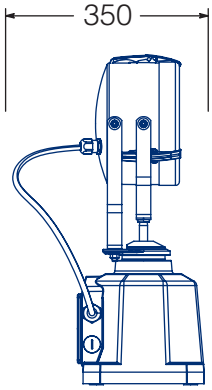




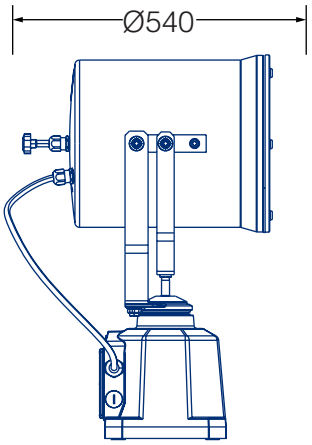




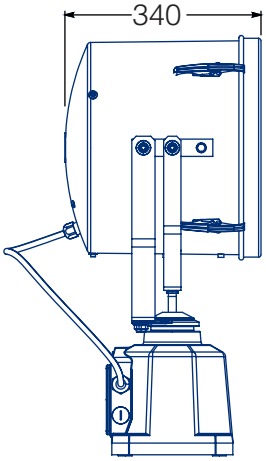
DHR210RCN



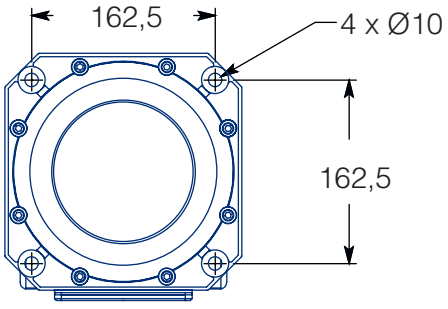
DHR220RCN



DHR260RCN



DHR350RCN

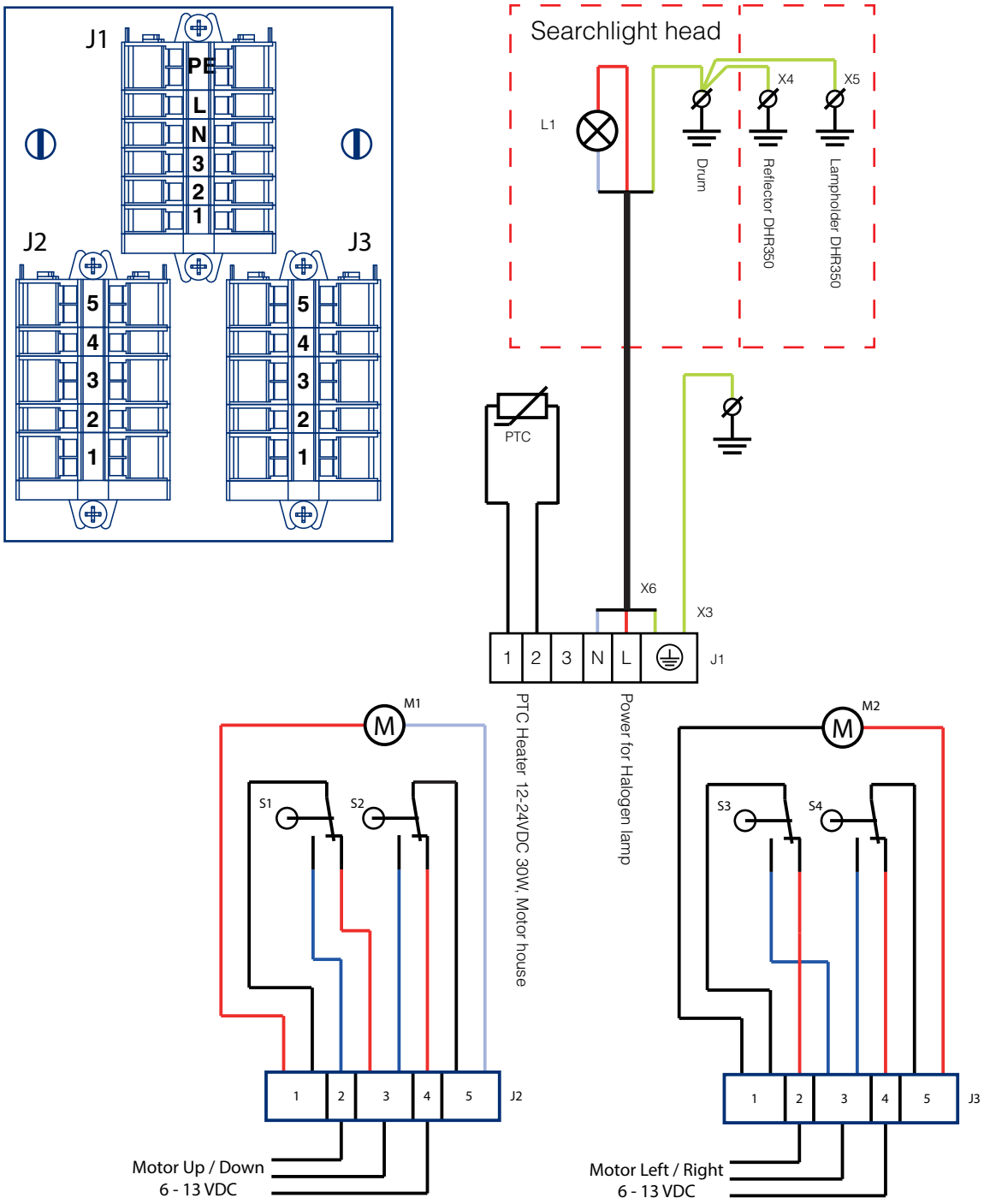


Base RCN

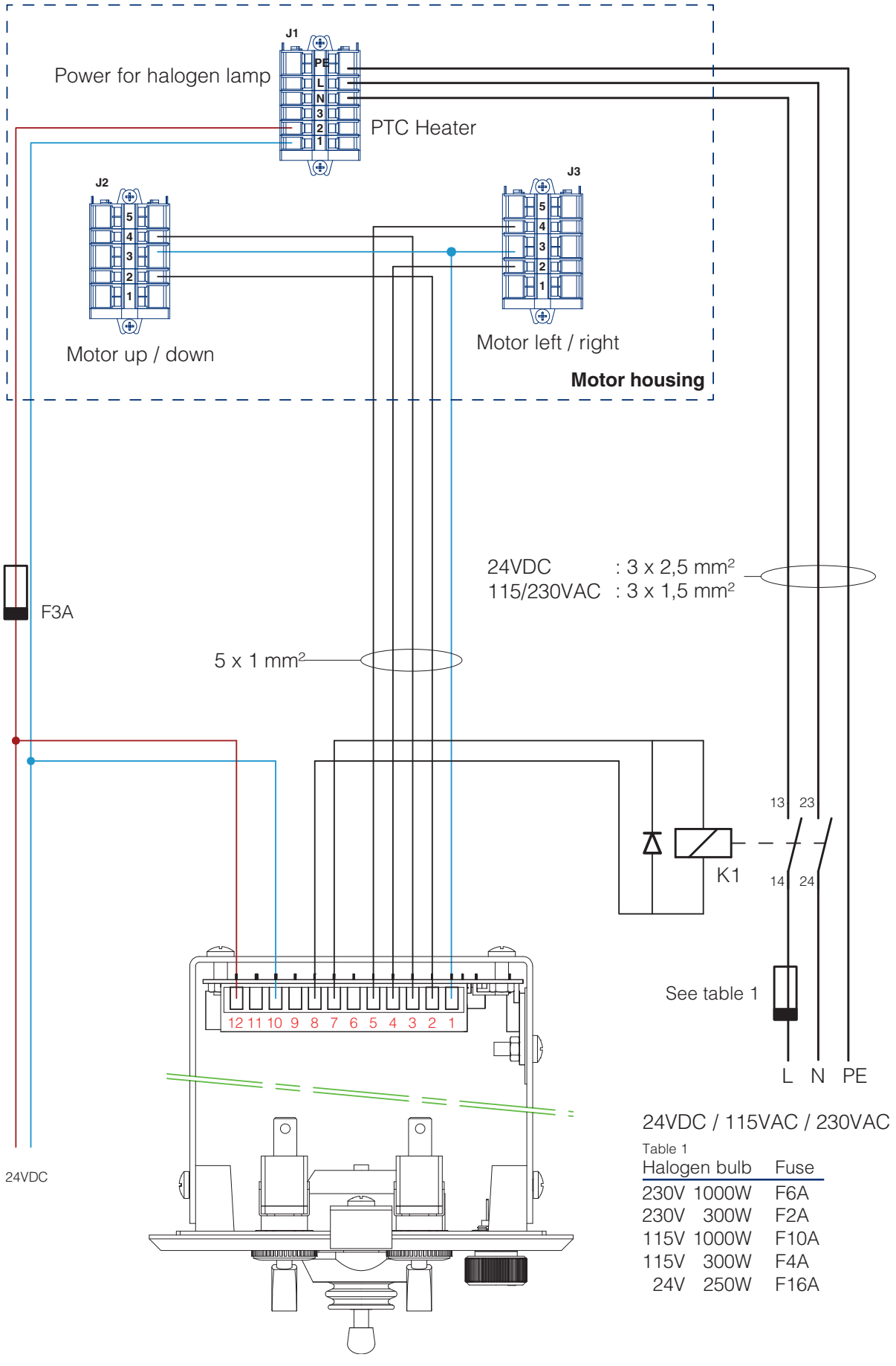
All sizes are in mm.

5. WIRING DIAGRAMS

RCN searchlight



Control panel

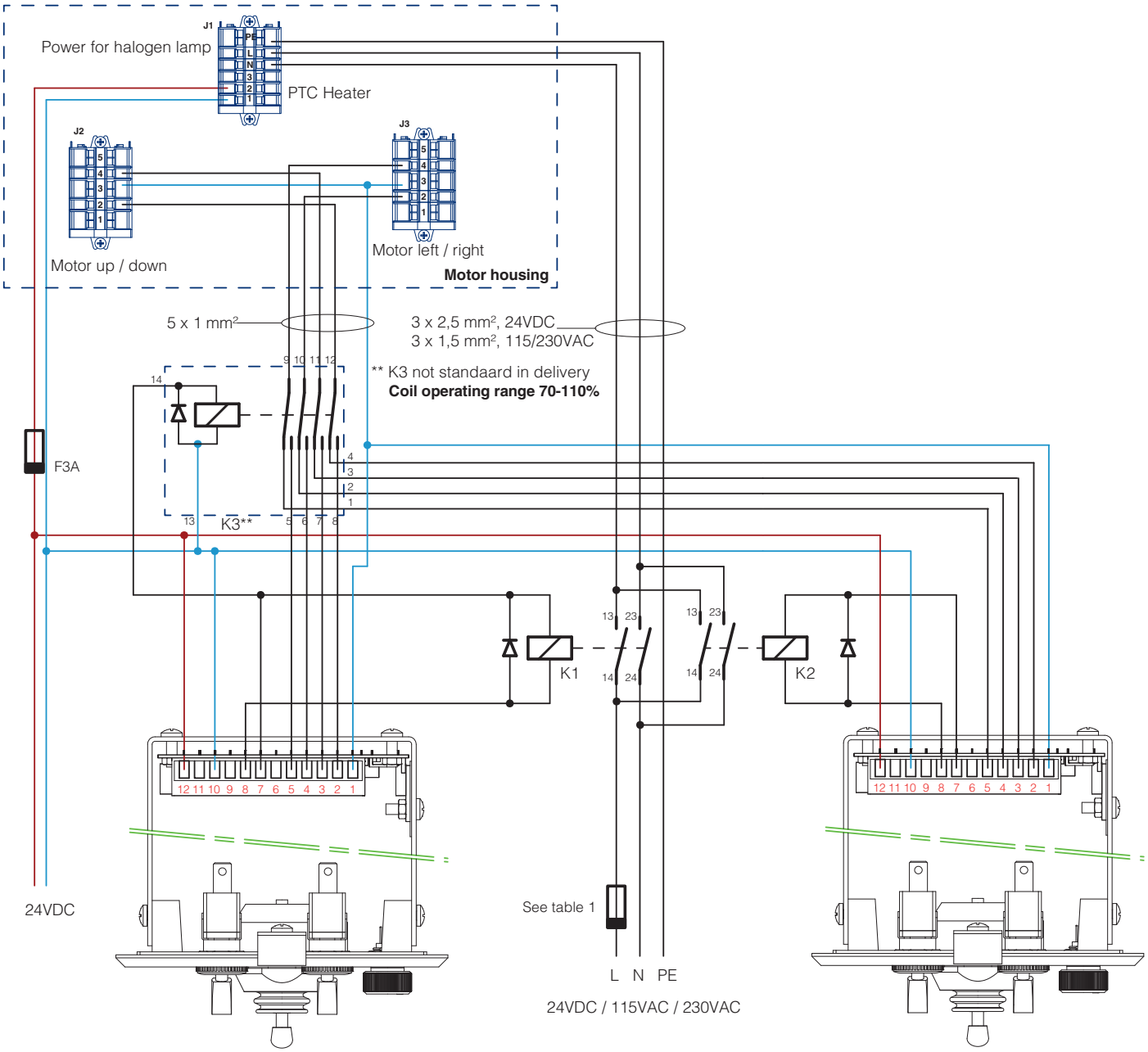


24VDC / 115VAC / 230VAC

Table 1

Halogen bulb	Fuse
230V 1000W	F6A
230V 300W	F2A
115V 1000W	F10A
115V 300W	F4A
24V 250W	F16A

Dual control panel



Joystick

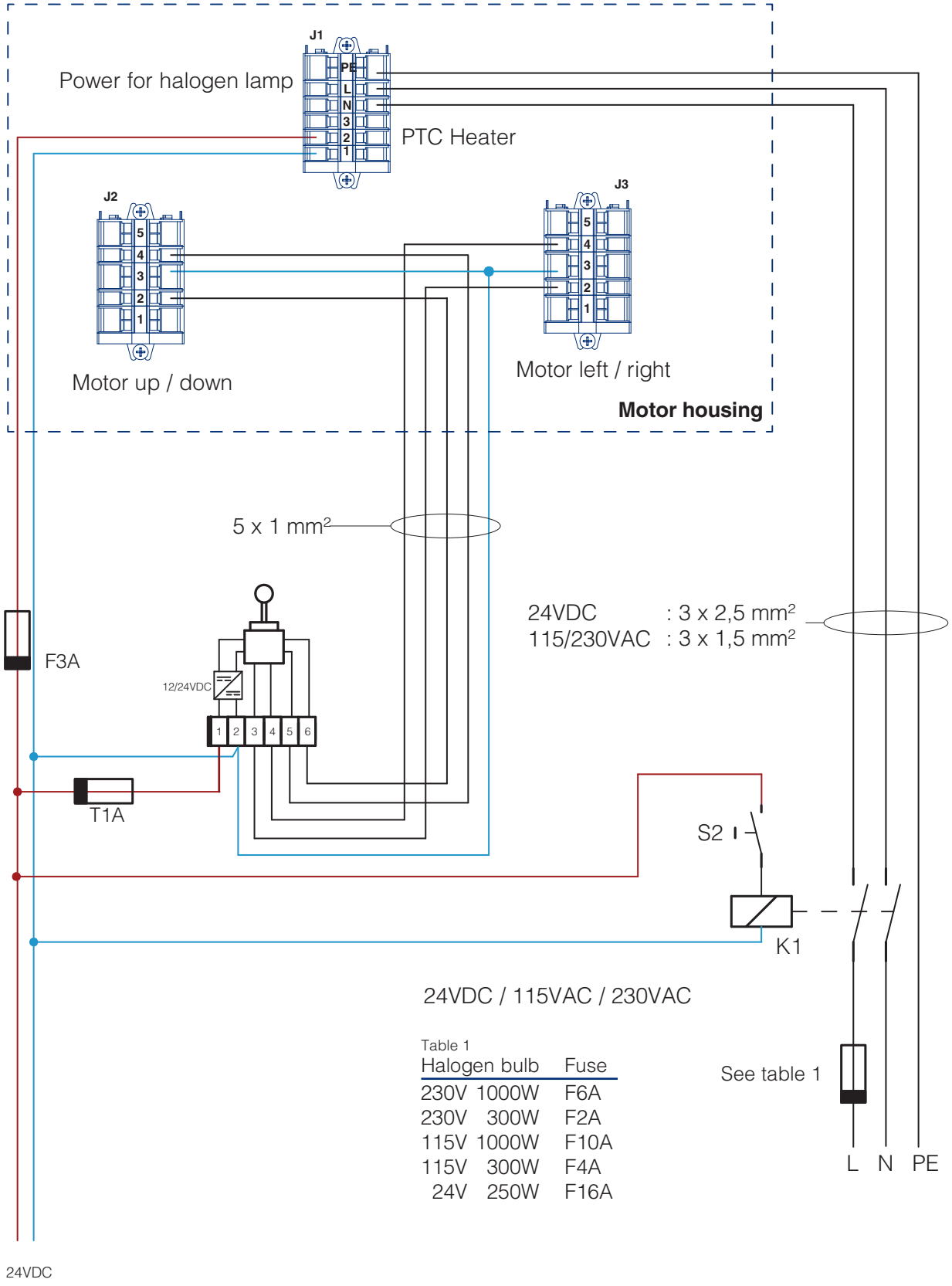
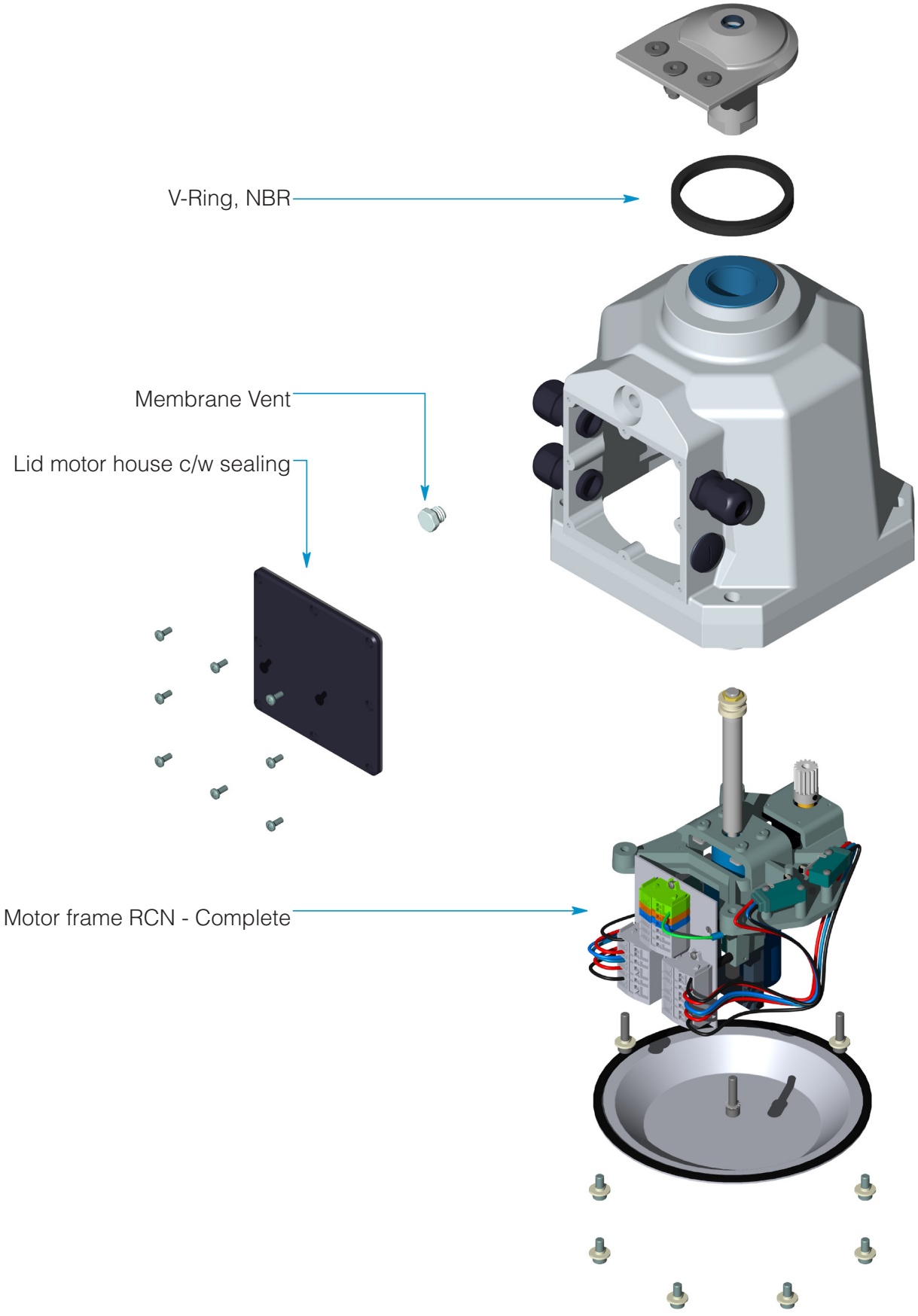


Table 1

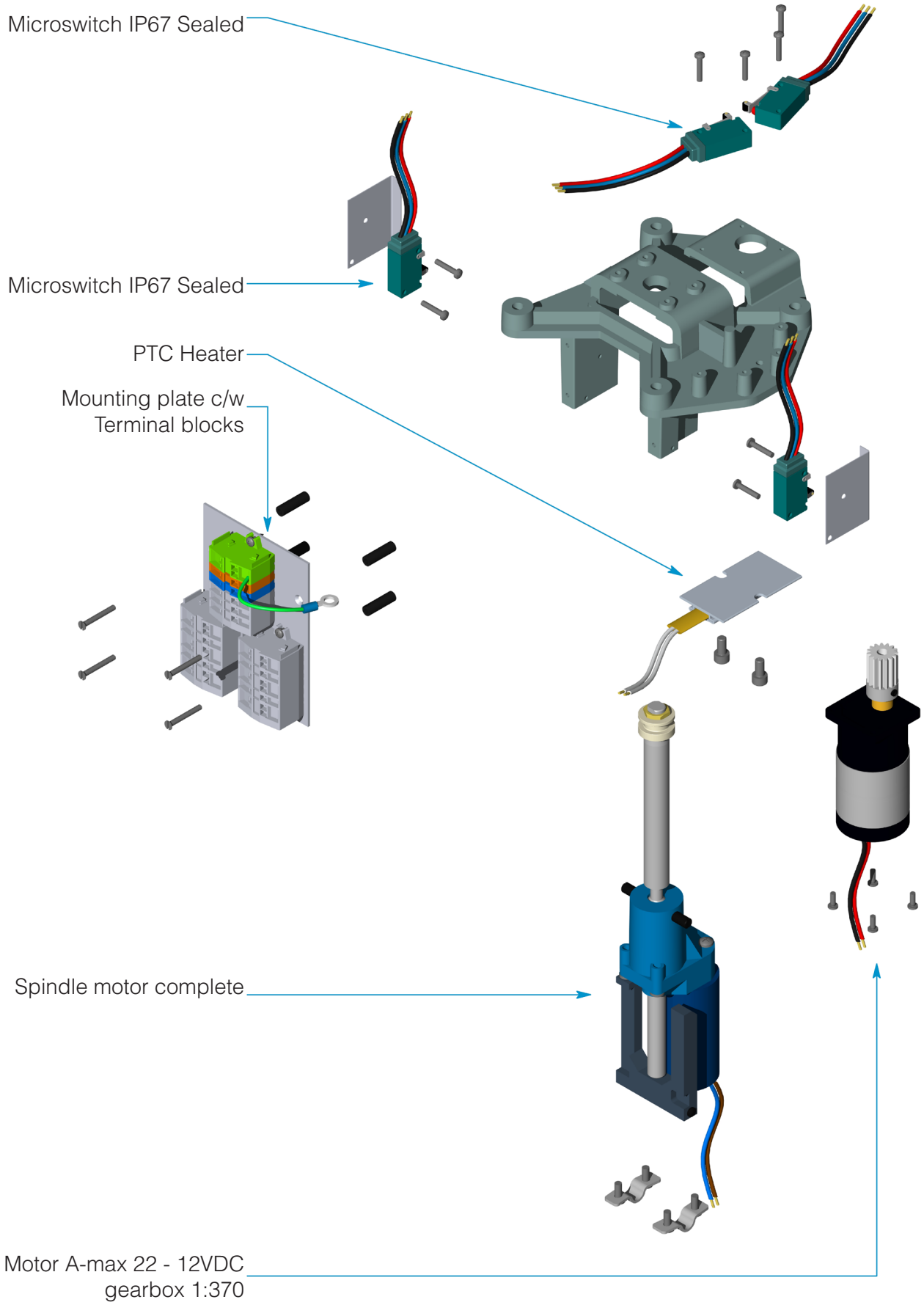
Halogen bulb	Fuse
230V 1000W	F6A
230V 300W	F2A
115V 1000W	F10A
115V 300W	F4A
24V 250W	F16A

6. SPARE PARTS

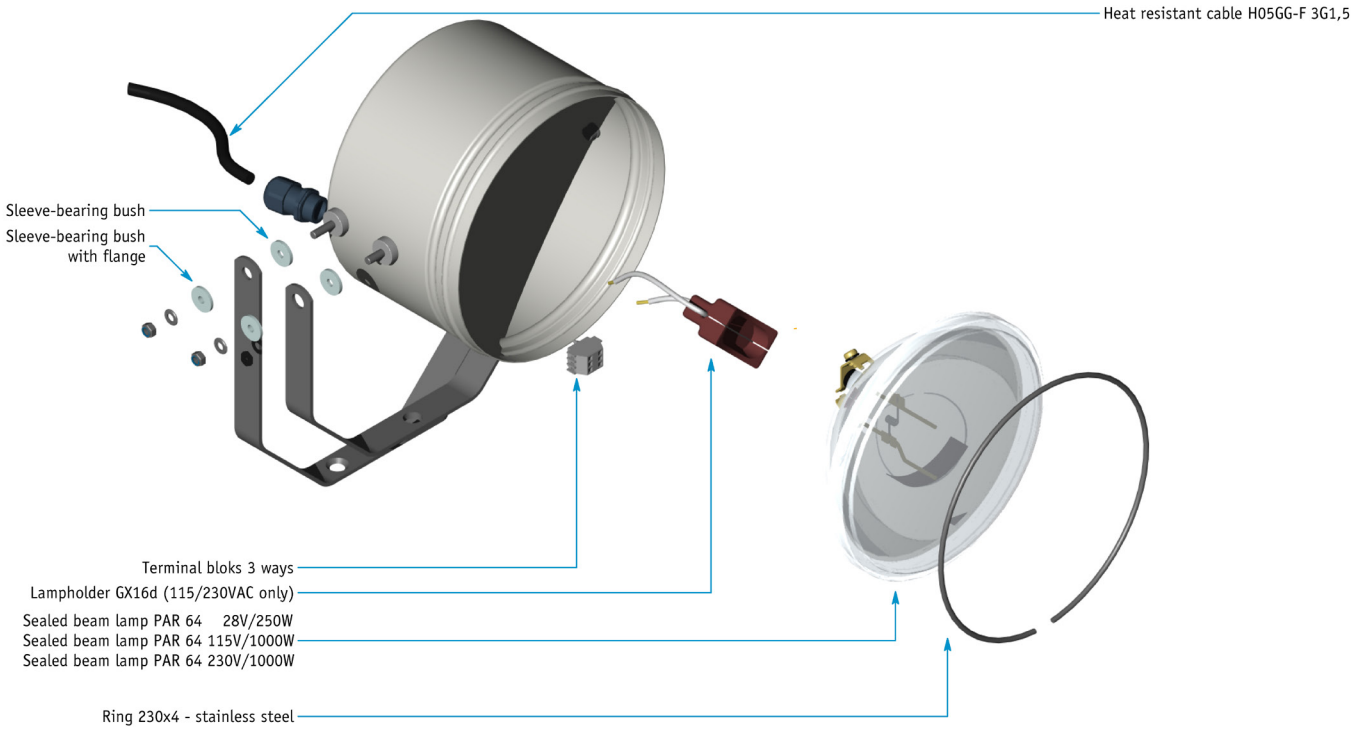
Motor housing



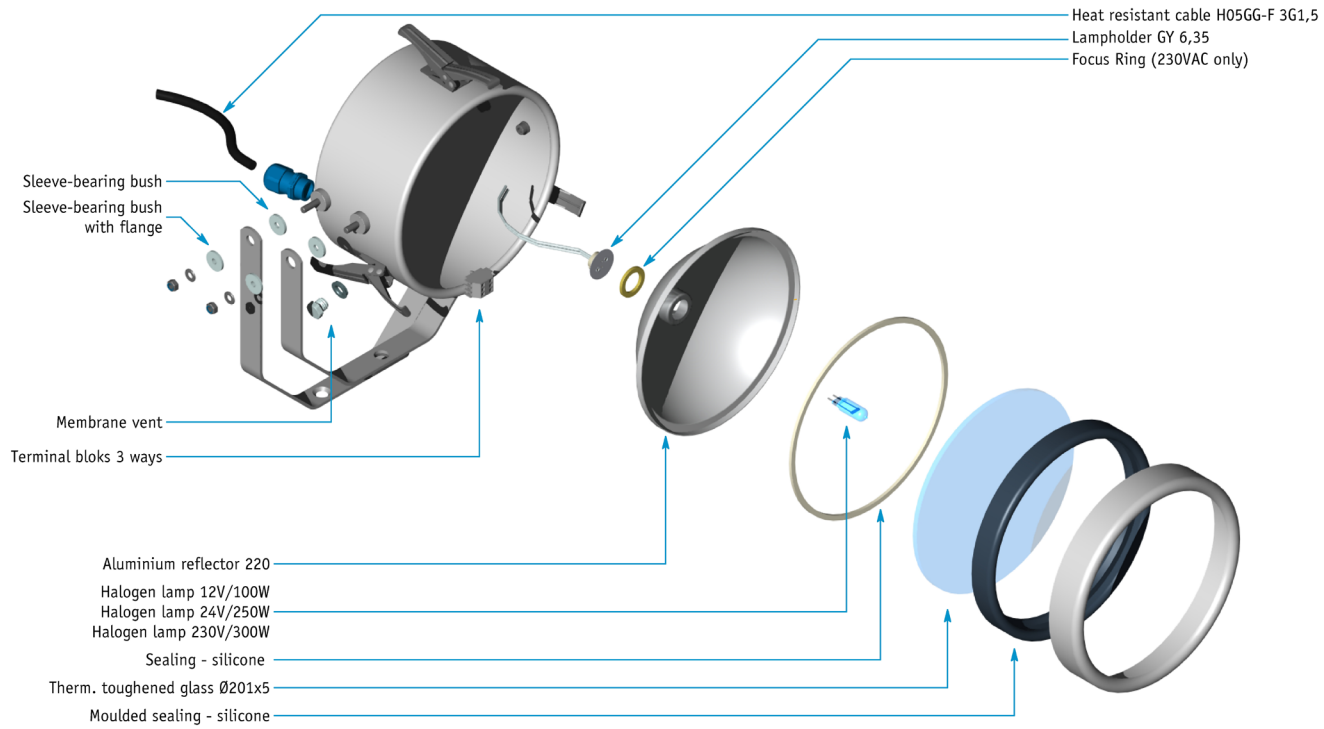
Motor frame


Microswitch IP67 Sealed
Microswitch IP67 Sealed
PTC Heater
Mounting plate c/w
Terminal blocks
Spindle motor complete
Motor A-max 22 - 12VDC
gearbox 1:370

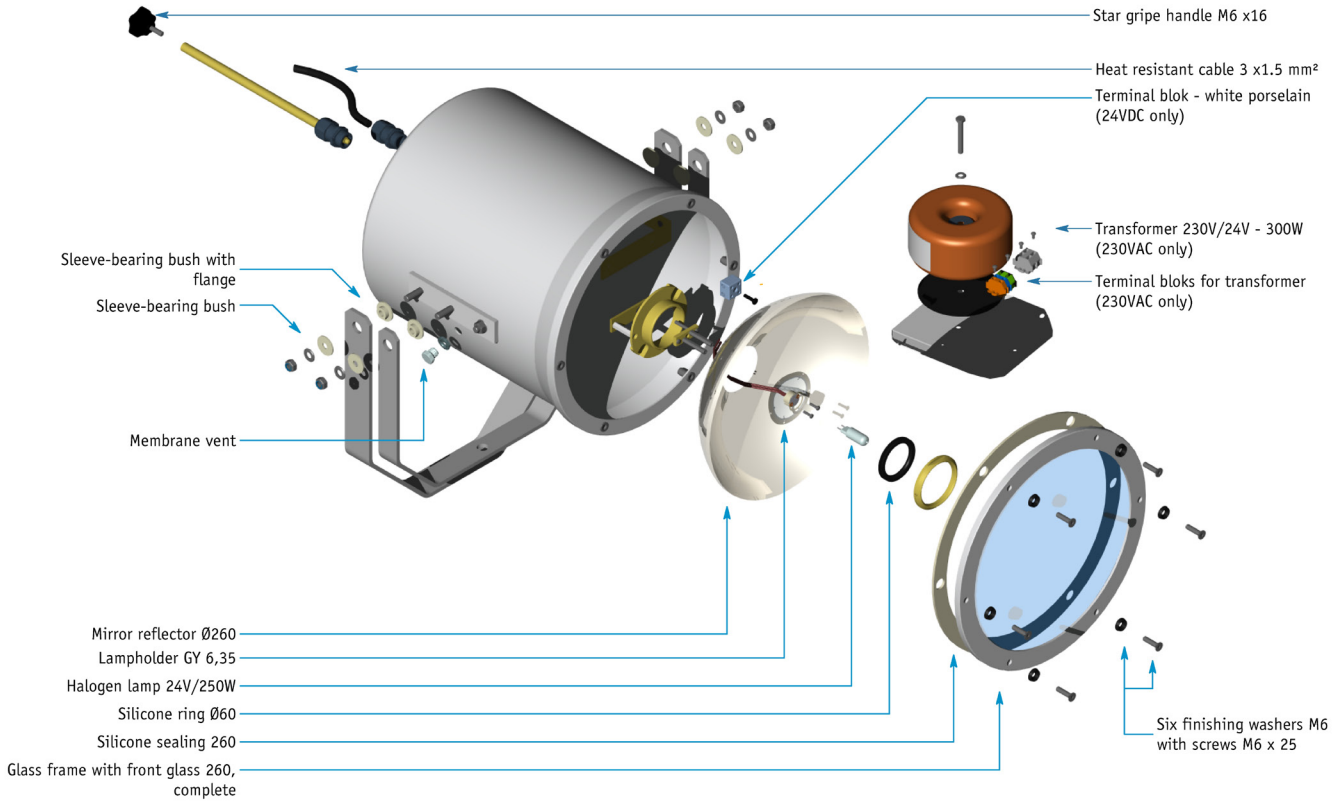
DHR210 head



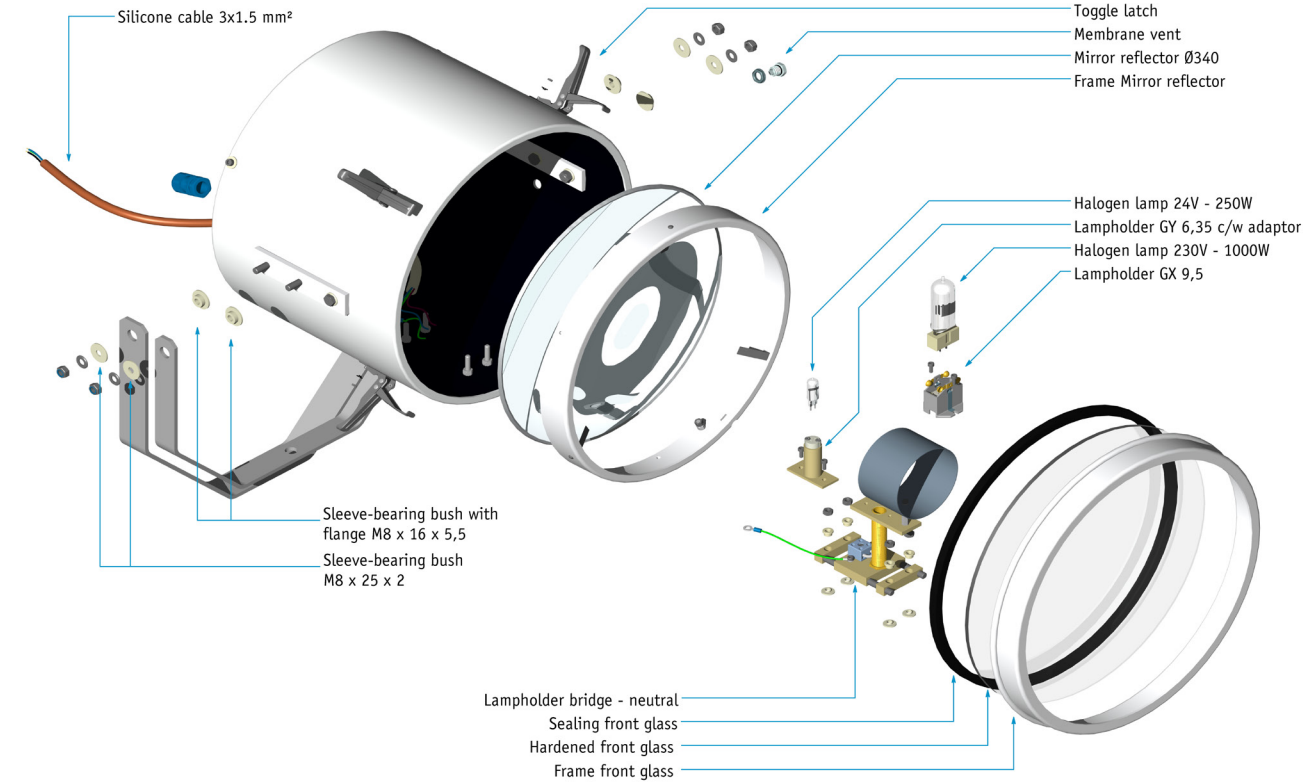
DHR220 head



DHR260 head



DHR350 head



ADVANCED MARITIME SIGNALLING SOLUTIONS

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