WISKA®
make power smile

OPERATING INSTRUCTIONS

SUEZ CANAL SEARCHLIGHT
SKS 575
230 V 50/60 Hz

Contents

1. About these instructions

1.1 Symbols and guidance signs in these instructions

Danger! There is a risk to life and limb if the warning is not followed.

Risk of electric shock! There is a risk to life and limb from electricity if the warning is not followed.

Use disposable gloves! Use disposable gloves for the following work to protect the material or your health.

Attention! There is a risk to the environment and the device if the warning is not followed.

1, 2, 3, … **Operating steps**, that should take place in a certain order, are numbered sequentially.

- **Operating steps**, that only consist of one step or that don't have to be followed in a certain sequence, are marked with a point.

➔ **Feedback** from executed actions begins with an arrow.

– **Enumerations** begin with an enumeration line.

1.2 Who are these instructions for?

These instructions are intended for the personnel, that are assigned with the assembly, operation and maintenance of the searchlight.

Risk of electric shock! All electrical installation and repair work may only be carried out by a qualified electrician!

2. Safety

The following safety instructions have to be strictly followed! Otherwise you put yourself and others in danger.

2.1 General information

Intended use

The SKS 575 searchlight is designed for lighting large and far away objects. The range of the searchlight is up to 3,460 m.
It is intended in particular for use on ships, especially for transfer through the Suez Canal and complies with the **Arab Republic of Egypt, Suez Canal Authority, Rules of Navigation, Section II Preparation for Transit, Article 28 Searchlight**.
It is suitable for ships over 30,000 SC.G.T.
Because of its intense light power the searchlight may not be used to illuminate persons in the nearby surroundings.
It is not suitable for illuminating, spaces on the ship or in buildings.

Danger! Unauthorised conversions and changes to the searchlight are not allowed, since this can endanger persons and may damage the unit. If this is not followed then the unit's approval becomes null and void.
Only original spare parts may be used. If this is not followed then the guarantee rights become null and void.

Risk of getting burned! Never touch the searchlight during operation without protection. The casing can reach 120 °C. Always allow the searchlight to cool down before maintenance and repair work. In case of burns cool the injured area immediately and seek medical help.

Risk of glare! Never look into the light source during operation. This is dangerous for the eyes. Never point the searchlight directly at anyone.

Risk of crushing! Risk of shearing! Before turning or tilting the searchlight: Make sure that there is nobody right beside it. A persons limbs can get trapped between the searchlight and the moving mechanism and sustain serious injured.

2.2 How to handle metal halide lamps

Strictly follow the safety instructions below when handling metal halide lamps:

Transport

- Always store and transport metal halide lamps in such a way that the glass bulb cannot break.
- Following the removal of metal halide lamps store them immediately in a safe place where they cannot be broken. If a lamp breaks proceed as described in chapter *2.3 Protective measures in case of a broken lamp.*

Operation

- Never touch the naked lamp bulb with your bare hands. Remove fingerprints on the lamp before installation with an alcohol solution and a soft lint-free cloth. When handling it is recommended to use disposable gloves to avoid fingerprints.

- Check the lamp for scratches, cracks or other damage before installation. Don't continue using damaged lamps.

Lifetime

Metal halide lamps have an average lifetime of approx. 750 operating hours. The actual lifetime can deviate in practice and depends on the ratio of switching on frequency to switching on duration.

Disposal

Metal halide lamps contain environmentally hazardous substances (incl. mercury), and hence in Europe have to be disposed of as special waste as per the directive *EWC-Code 2001 21* for "Fluorescent tubes and other mercury-containing waste*". Hence metal halide lamps have to be brought to suitable disposal sites. In other countries the relevant legislation has to be followed. Metal halide lamps may not be destroyed under any circumstances during disposal.

Health risks

Breathing in of mercury or mercury compounds in the form of vapour or dust can damage your health. Apart from inhaling, mercury can also be absorbed by penetrating the skin.

2.3 Protective measures in case of a broken lamp

We recommend proceeding as follows, in case of a lamp break or explosion, in order to eliminate any health risks:

- All persons in the close surroundings should evacuate the area immediately, to avoid inhaling mercury vapour.
- Ventilate the area adequately for 20 to 30 minutes.
- After the lamp has cooled down and in any case before restarting any residual mercury is to be thoroughly removed from inside the light using mechanical means.

Disposable gloves are recommended to avoid skin contact. Liquid mercury can also be absorbed using a standard absorption agent (based on active carbon).

2.4 Safety devices

Radiation/escape of dangerous particles

- Metal halide lamps radiate UV light which is harmful to the eyes. The special searchlight casing prevents you from looking directly into the arc.
- If the metal halide lamp explodes during operation, the casing remains intact and contains any heated glass splinters, see chapter *2.3 Protective measures in case of a broken lamp.*

2.5 Operating conditions

Installation location of the searchlight

Under normal use conditions the casing surface temperatures can go up to 120 °C. Only install the searchlight close to heat resistant material. To eliminate any dangers: Never store any explosive or highly flammable materials right beside the searchlight. These include petrol, paper and paint for example.

2.6 Maintenance / Cleaning

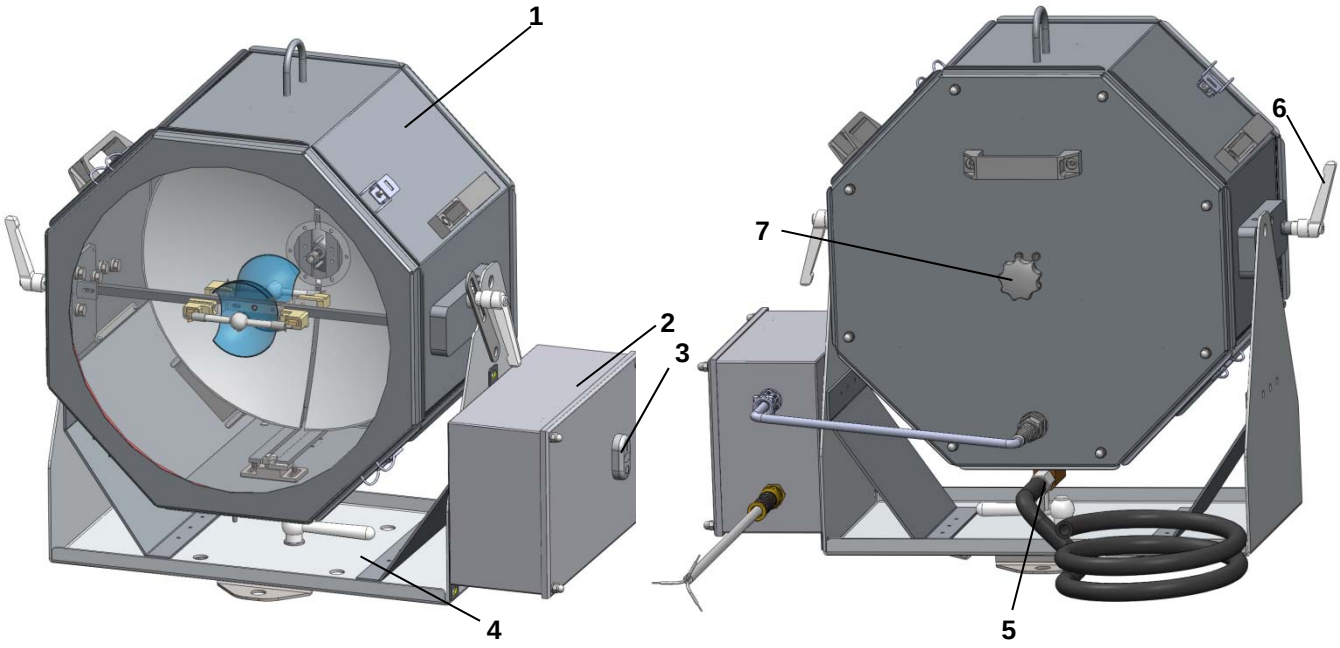
Before carrying out maintenance or cleaning work:

- Set the main switch on the PSUH power supply unit to OFF.
- Make sure that the complete electrical system is de-energised.
- Wait until the searchlight has cooled down.

3. An overview of the unit

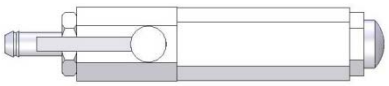
3.1 Layout drawing

Base configuration

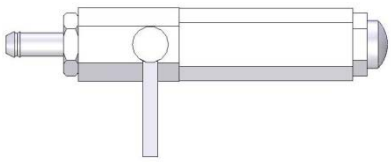


1	Searchlight head SKS 575
2	Ballast unit PSUH SKS 575
3	ON/OFF switch and indicator lamp for searchlight
4	Searchlight baseplate + turning unit
5	Pressure connection for atmospheric pressure with flexible tube (5m)
6	Lamp change mechanism
7	Hand wheel for adjusting the reflector

Pressure connection open



Pressure connection closed



Pressure connection! Make sure that the ball valve is in the open (flow) position and that the pressure hose is routed properly, so that the casing cannot build up any overpressure or vacuum.

3.2 Technical data

Type SKS 575 230 V 50/60 Hz
Manufacturer WISKA Hoppmann GmbH

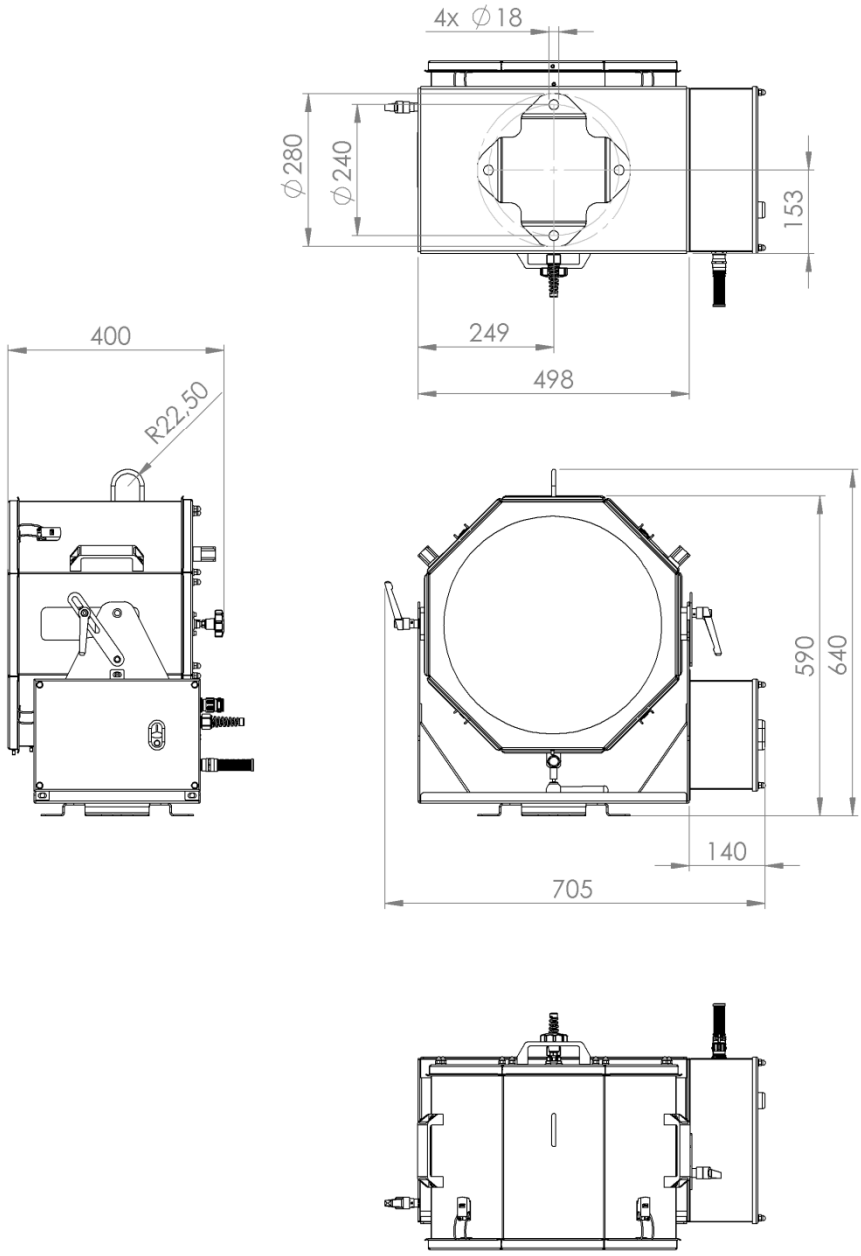
Searchlights	
Lamp:	
Illuminant	Metal halide discharge lamp
Luminous intensity	4 million cd
Range	3,200 m
Lamp power	575 W
Average lamp lifetime	750 h
Reflector	400 mm
Auxiliary mirror	100 mm
Casing:	
Material	Stainless steel 1.4301
Colour	RAL 9016
Diameter	472 mm
Depth	400 mm
Weight	30 kg
Protection rating	IP 68 (30 min. at 0.25 bar)

Ballast PSUH	
Supply voltage	230 V 50/60 Hz
Fuse	16 A
Dimensions WxHxD	330 x 355 x 225
Weight	8 kg
Protection rating	IP 66

Lamp ignition process		
1.	Generation of ignition voltage	Instant of switching
2.	Warm-up phase	approx. 45 seconds
3.	Current consumption limitation	Operating condition
4.	Re-ignition after switching off	immediately

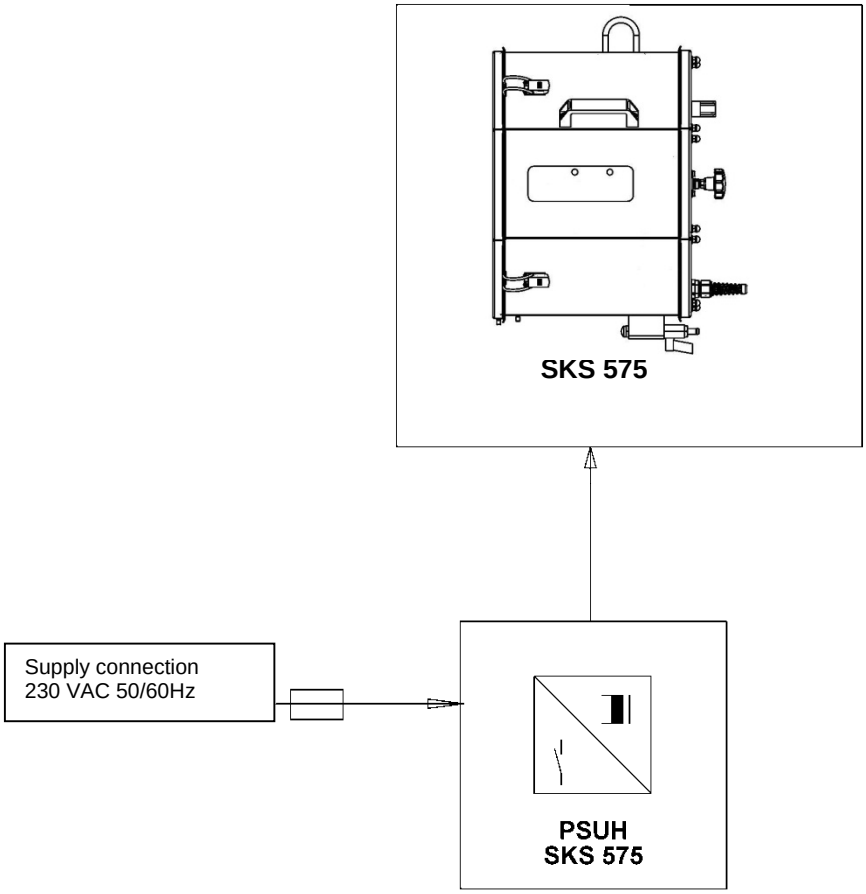
3.3 Dimensions

Searchlight head with deck and PSUH SKS 575



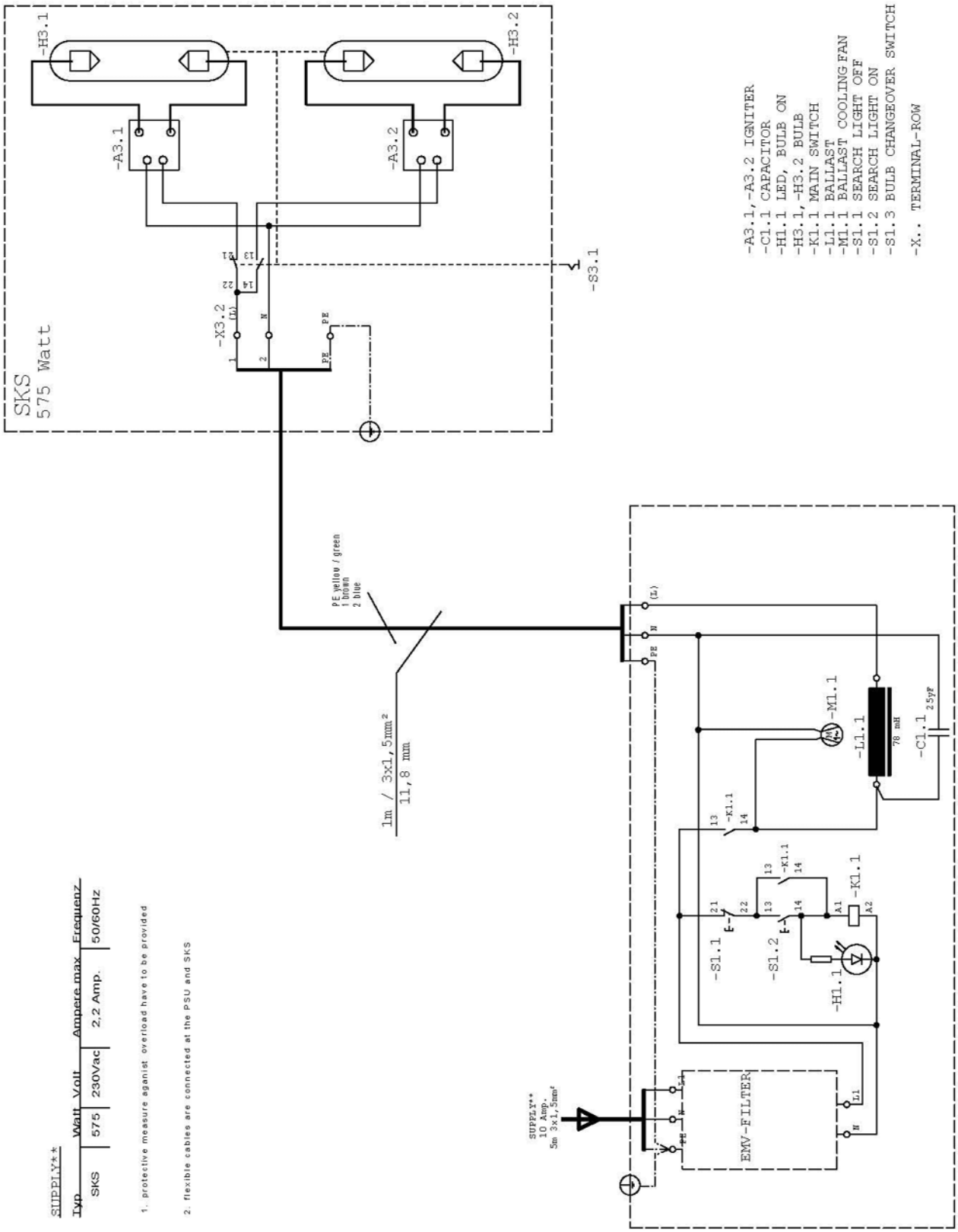
3.4 Circuit diagram

Block diagram



Power Supply Unit for SKS 575

Circuit diagram



SUPPLY**

Typ	Watt	Volt	Ampere max	Frequenz
SKS	575	230Vac	2,2 Amp.	50/60Hz

1. protective measure aganist overload have to be provided

2. flexible cables are connected at the PSU and SKS

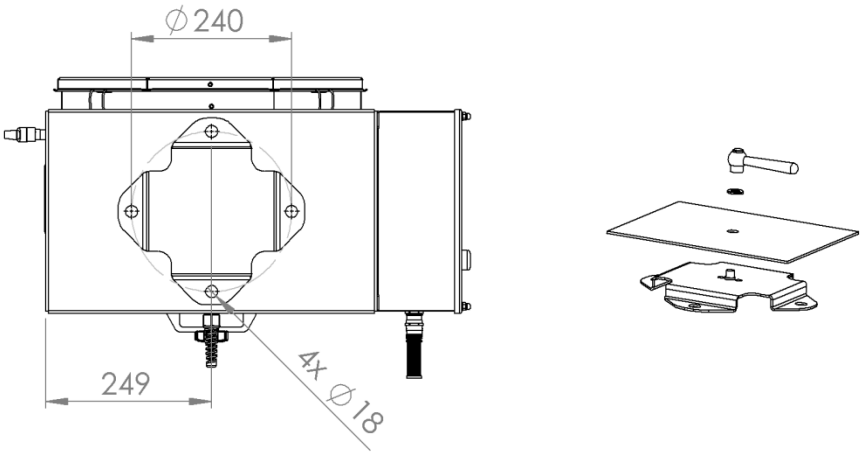
4. Installation

4.1 Unpacking

Check the delivery. Do not start the unit if there is transport damage or missing parts! Contact WISKA or our sales partner in your country. The address can be found at the back of these instructions or on the internet under www.wiska.de.
Think about the environment and send the packing for recycling!

4.2 Mounting

Mounting and installing the searchlight



1. Four fixing holes can also be drilled here on a circle of 240 mm in diameter: see chapter *3.3 Dimensions*. In order to ensure that the searchlight can still be rotated, it can be fastened with the adjustable clamping levers (centric hole in the baseplate see drawing on the right side).
2. Position the searchlight baseplate and bolt it down.
3. Connect the earth cable.

Installation of the SKS 575

Risk of electric shock! Electrical connections may only be carried by a qualified electrician. Please ensure that the mains connection is off and that nobody can accidentally energise the connections during installation!
The circuit diagram is also included separately or can be found in chapter 3.5 *Circuit diagram.*

Electrical connection values

Mains voltage: 230 VAC, 50/60Hz.
Device fuse: 1 x 16 A (included with delivery)

1. Bolt the searchlight down firmly through the holes.
2. Set the ball valve to the flow position and fasten the hose to the nozzle.
3. Connect the cable from the PSUH SKS to the voltage supply

Mains connection

- Observe the relevant national and international regulations! Make a correct and fool proof connection!
  Prior to commissioning:
- Check for correct installation. Wrong connections can destroy the metal halide lamps or the searchlight.
- Check for correct connection of the earth / ground!
- Reinsert the fuse.

4.3 Electrical connections

Risk of electric shock! Electrical connections may only be carried by a qualified electrician. Please ensure that the mains connection is off and that nobody can accidentally energise the connections during installation!
The circuit diagram is also included separately or can be found in chapter *3.5 Circuit diagram.*

Electrical connection values

Mains voltage: 230 VAC, 50/60Hz.
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Mains connection

- Observe the relevant national and international regulations! Make a correct and fool proof connection!

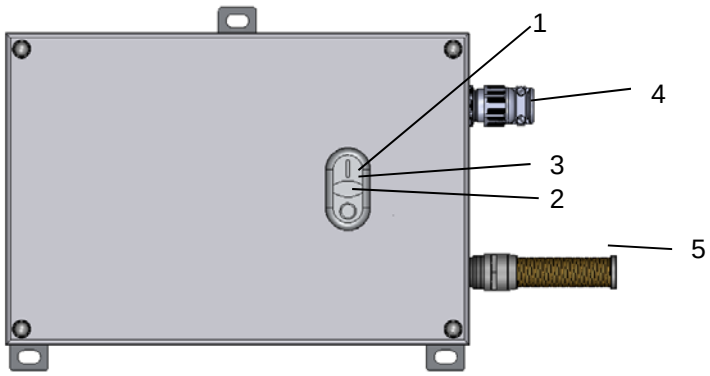
  Prior to commissioning:
- Check for correct installation. Wrong connections can destroy the metal halide lamps or the searchlight.
- Check for correct connection of the earth / ground!
- Reinsert the fuse.

5. Operation

The operation of the searchlight and the associated PSUH SKS 575 ballast unit is described below.
Particular attention is to be paid to the following points:

- Only use the control knobs provided for setting up the searchlight. Never touch the searchlight casing during operation since there is a **risk of getting burned!**
- Make sure that nobody is in front of the searchlight when switching on or during operation, - **Risk of glare!**
- Now read on from item *5.2 Switching on*.

5.1 Ballast unit PSUH SKS 575



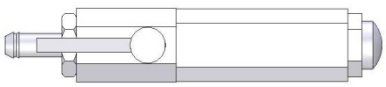
1 On switch (I)
2 Off switch (O)
3 Searchlight indicator lamp
4 Cable for voltage supply
5 Cable to the searchlight head

5.2 Switching on

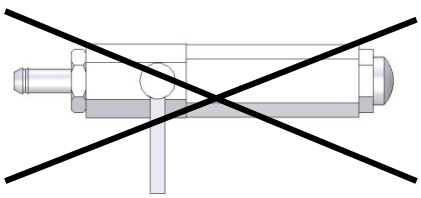
Risk of getting burned! Never touch the searchlight during operation without protection. The casing can reach 120 °C. In case of burns cool the injured area immediately and seek medical help.

Risk of glare! Never look into the arc during operation. This is dangerous for the eyes. Never point the searchlight directly at anyone. Before switching on make sure that nobody is near the searchlight.

Pressure connection open



Pressure connection closed



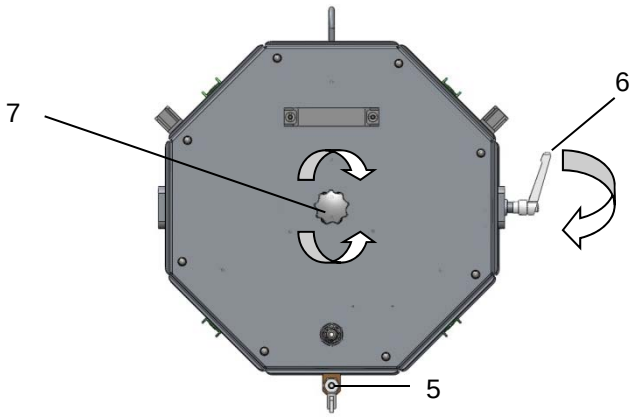
Pressure connection! Make sure that the ball valve is in the open (flow) position and that the pressure hose is routed properly, so that the casing cannot build up any overpressure or vacuum.

Before switching on the searchlight: make sure that all work on the searchlight has been completed and refer to chapter *4.2 Mounting.*

1. Turn on the main switch (1) on the PSUH ballast unit. The indicator LED (3) lights up and the lamp is ignited.
2. If the lamp does not ignite or only flashes a few times, either the operating voltage is too low or the lamp is defective.

   In order to exchange the lamp, refer to chapter *5.4 Changing the lamp (without opening the casing)* or chapter *7.3 Replacement of defective parts.*

5.3 Searchlight head SKS 575



5 Pressure connection for atmospheric pressure
6 Lamp change mechanism
7 Hand wheel for adjusting the reflector

5.4 Adjustment of the reflector

Risk of getting burned! Never touch the searchlight during operation without protection. The casing can reach 120 °C. In case of burns cool the injured area immediately and seek medical help.

Risk of glare! Never look into the arc during operation. This is dangerous for the eyes. Never point the searchlight directly at anyone. Before switching on make sure that nobody is near the searchlight.

The reflector can be adjusted with the aid of the hand wheel (7) on the rear of the searchlight head. To do this, turn the hand wheel (7) until the desired angle is achieved.

5.5 Changing the lamp **(without opening the casing)**

Risk of getting burned! Never touch the searchlight during operation without protection. The casing can reach 120 °C. In case of burns cool the injured area immediately and seek medical help.

Risk of glare! Never look into the arc during operation. This is dangerous for the eyes. Never point the searchlight directly at anyone. Before switching on make sure that nobody is near the searchlight.

The lamp can be exchanged without opening the casing. To do this, switch off the appliance via the button (O); the LED on the PSUH SKS 575 goes out. Switch over the lamp using the lamp change mechanism (6) and then press the start button (I) on the PSUH SKS 575 again. The changed lamp ramps up slowly to the full light intensity.

5.6 Switching off

Attention! Switch off the searchlight only via the button (O). In order to avoid a vacuum in the casing, wait until the searchlight has cooled down before closing the ball valve.

6. Maintenance

6.1 Cleaning

Clean the front glass on the outside as needed. When doing so check the function of the fixing clamps and inspect them for rust. Cleaning the inside of the searchlight is not necessary. A coloured film develops on the mirror surface over time. This is harmless and does not affect the light power.

Risk of glare! Ensure that the searchlight cannot be switched on during cleaning work.

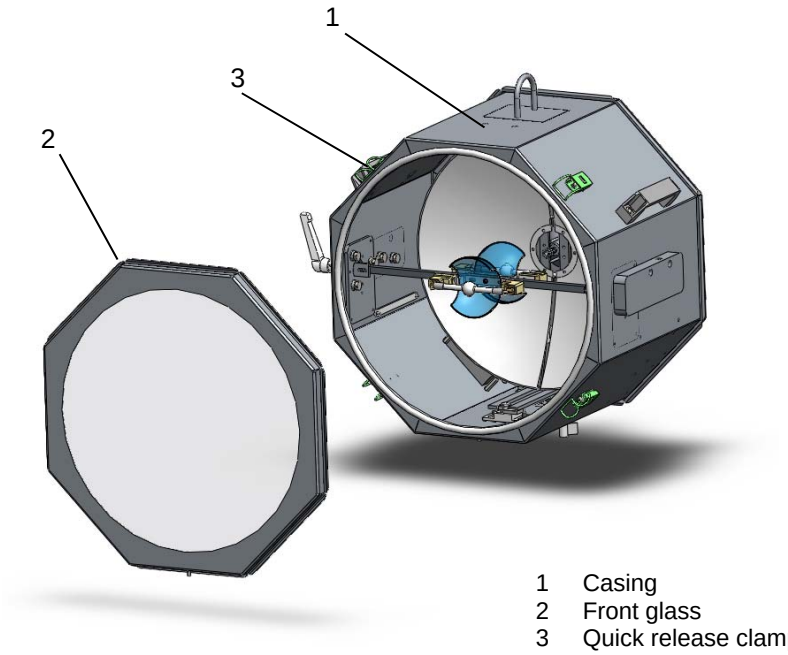
7. Replacement of defective parts

7.1 Before starting work

1. Make sure that the complete electrical system is de-energised and that it cannot be switched on again accidentally.
2. Wait until the searchlight has cooled down.
3. Read chapter *2.2 How to handle metal halide lamps*.
4. Make sure that the metal halide lamps do not get damaged during handling.

7.2 Assembly overview

The following illustrations should help you to better understand the design of the searchlight, before starting with the replacement work. Follow the instructions on the following pages for carrying out the replacement work!



1 Casing
2 Front glass
3 Quick release clamp

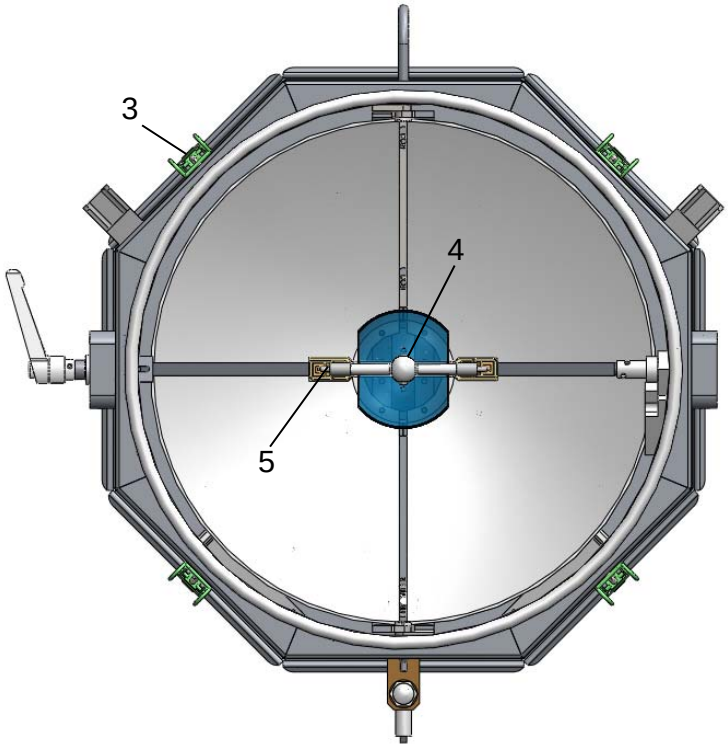
7.3 Lamp replacement

The lamp is defective, if

- it only flashes a few times, but does not light,
- the lamp electrodes are burned out,
- the glass bulb is black.

Replace the lamp also if it has reached its average lifetime of 750 hours.

Danger! Persons who have to carry out these repairs, have to be instructed by a trained professional and also made aware of the dangers and necessary protective measures to be taken!
Be sure to read chapter *7.1 Before starting work!*



Removal

1. Disengage the quick releases 3 on the front side and put the front glass carefully aside.
   Note: The glass rod of the lamp bulb 4 is held horizontally in the lamp support 5. The correct handling is to be observed during removal and installation.
2. Loosen the defective lamp until it can be removed without force in an upward direction out of the holder 5.
3. Put the defective lamp down so that the glass bulb does not get damaged.

Attention: If for any reason the glass bulb of the lamp should be broken, then you have to proceed as described in *2.3 Protective measures in case of a broken lamp*, to protect your health and the environment.

Installation

Attention! Check the new lamp before installation for fingerprints or damage such as scratches or cracks. Do not start the lamp if there is visible damage. Remove any fingerprints with an alcohol solution and a soft lint-free cloth.

1. Open the protective packing of the new lamp. Make sure not to touch the glass bulb with your fingers during installation. Use disposable gloves when handling the lamp to avoid leaving fingerprints.
2. Insert the lamp into the slot in the lamp holder 5 until it reaches the stop.
3. Fix the lamp in this position.
4. Put the front part of the searchlight back in place and fix it with the quick releases.
5. Dispose of the defective lamp properly as described in *2.2 How to handle metal halide lamps.*

8. Disposal

Electrical components contain substances which are hazardous for the environment. Ensure proper disposal or send the defect parts to WISKA. The address is on the back page of these instructions.
Pay particular attention to properly dispose of the lamps. To do so also read chapter *2.2 How to handle metal halide lamps.*

Health risk
Under no circumstances may metal halide lamps be destroyed during disposal. For this see also *2.3 Protective measures in case of a broken lamp.*

9. Spare parts

Searchlight head SKS 575

Designation	Art. no.
Front frame + front glass	22000038
Reflector unit (two-part)	22000105
Auxiliary mirror	22000106
Metal halide discharge lamp 575 W	22000107
Lamp holder	22000109
Ignitor type IG575KVG	22000108

Ballast PSUH

Designation	Art. no.
Series impedance for 575 W lamp	22000110

Accessories

Designation	Art. no.
Cover S 400	22000473
Mounting device (Turning Unit)	22000474

All other parts can be obtained by contacting WISKA sales.

10. Type Approval

DNV

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAE00002T9
Revision No:
2

This is to certify:

that the Electrical Equipment

with type designation(s)
SKS 575

issued to
WISKA Hoppmann GmbH
Kaltenkirchen, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Temperature	**C**
Humidity	**B**
Vibration	**A**

Issued at **Høvik** on **2024-07-03**
This Certificate is valid until **2029-07-02**.
DNV local unit: **Hamburg**

for **DNV**

Approval Engineer: **Uwe Supke**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

GL

Type Test Report

Subject	:	Suez Canal Searchlight Type SKS 575
Manufacturer	:	Wiska Hoppmann& Mulsow GmbH Kisdorfer Weg 28 D 24568 Kaltenkirchen
Technical data :		power supply 120/230V AC, 50/60Hz ingress protection of the searchlight IP X6/X8 (30min, 0.25bar) power consumption 575W
Date of test	:	2009-07-27
GL Order	:	**7670 08 63711-155**
Testbasis	:	Suez Canal Authority regulation article 28, Edition February 1995
Documentation:		Dwg. 10100883 dated 2009-07-06 W09-0067-03 dated 2009-02-02 Lighting test report 4615/401292/09 dated 2009-06-12 issued from Bundesamt für Seeschiffahrt und Hydrographie (BSH)

Summary or tests

Test item	result
Dimensional check	passed
Minimum range of radiation of single beam 1,800m ahead (Brightness of 1 lux approx. at the atmospheric transmission factor T= 0.85).	passed*
The power of the lamp must give a luminous intensity of single light beam not less than 3 million candela, which is equivalent to high efficiency incandescent lamp of : (i)2,000 Watts for vessels up to 30,000 S.C. gross tons (ii)3,000 Watts for vessels over 30,000 S.C. gross tons	passed*

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The drum and stand should be of high corrosion resisting material and can be operated both horizontally and vertically.	passed (stainless steel 1.4301)
The front glass must be of hardened type and can stand rapid cooling.	passed safety glass thermal shock resistant
The reflector must be in two halves of precise ground glass mirror of highest quality or of polished aluminium having at least 95% the reflective capacity of the glass mirror.	passed
The two halves of the reflector can be brought together (zero position) to make a single reflector light beam and can be parted to give to separate light beams each of 5degrees at least, on the horizontal level with adjustable dark sector from 0 to 10 degrees.	passed
(The searchlight drum must be water tight (pressure test 0.25 Kg./cm ^{2}) and gastight (according to the classification rules for the vessel's electric appliances within dangerous areas) and provided with a vent-out to which a flexible hose can be fitted on the drum to dissipate the heated air out of the searchlight in addition to a safety vent.	passed
On vessels carrying petroleum products, LPG or LNG or inflammable substances , or vessels Not Gas Free , exit of hot air must be effectuated in a place devoid of inflammable gas.	passed (to be realized onboard)
The searchlight must be equipped with 2 lamp carriers that can be turned into position to let the lamp exactly in the focus of the reflector, and the current must be switched on automatically.	passed
The electric system (switches, plug, socket and cables) must be of first class marine type. The degree of protection IP 55 or similar standards.	installation requirement for on board

* see attached lighting test report from BSH

GERMANISCHER LLOYD 1867 118

Hamburg, 2009-07-2009

(Joachim Zipfel)

Attachment: BSH lighting test report 4615/4041292/02 dated 2009-06-12

WISKA Hoppmann GmbH
Kisdorfer Weg 28
24568 Kaltenkirchen
Germany
☎ +49-4191-508-0
+49-4191-508-129
contact@wiska.de
www.wiska.com