



MAINTENANCE

WE MOVE WATER



การบำรุงรักษาเครื่องสูบน้ำ

1. อดจารบีทุกๆ 500 ชั่วโมงของการทำงานที่ Packing Box ของเครื่องสูบน้ำ (SKF รุ่น LGMT3, Mobilux™EP 2,3, PTT EP Grease NL GI 2,3)
2. เปลี่ยนน้ำมันหล่อลื่น Thrush Bearing ทุกๆ 2,000 ชั่วโมงการทำงาน หรือทุก 1 ปี น้ำมันต้องเป็น Turbine Oil Grade-ISO-VG 68
3. ตรวจสอบเช็คการได้ศูนย์ระหว่างเครื่องสูบน้ำกับมอเตอร์ไฟฟ้า ทุกๆ 6 เดือน



01 การตรวจสอบระบบเครื่องกล & ระบบไฟฟ้าประจำวันและระบบไฟฟ้า

SCAN ME!

02 ข้อมูลรายละเอียดเครื่องกล & มอเตอร์และระบบไฟฟ้า ระบบไฟฟ้า

SCAN ME!

03 ข้อมูลคู่มือการใช้งาน

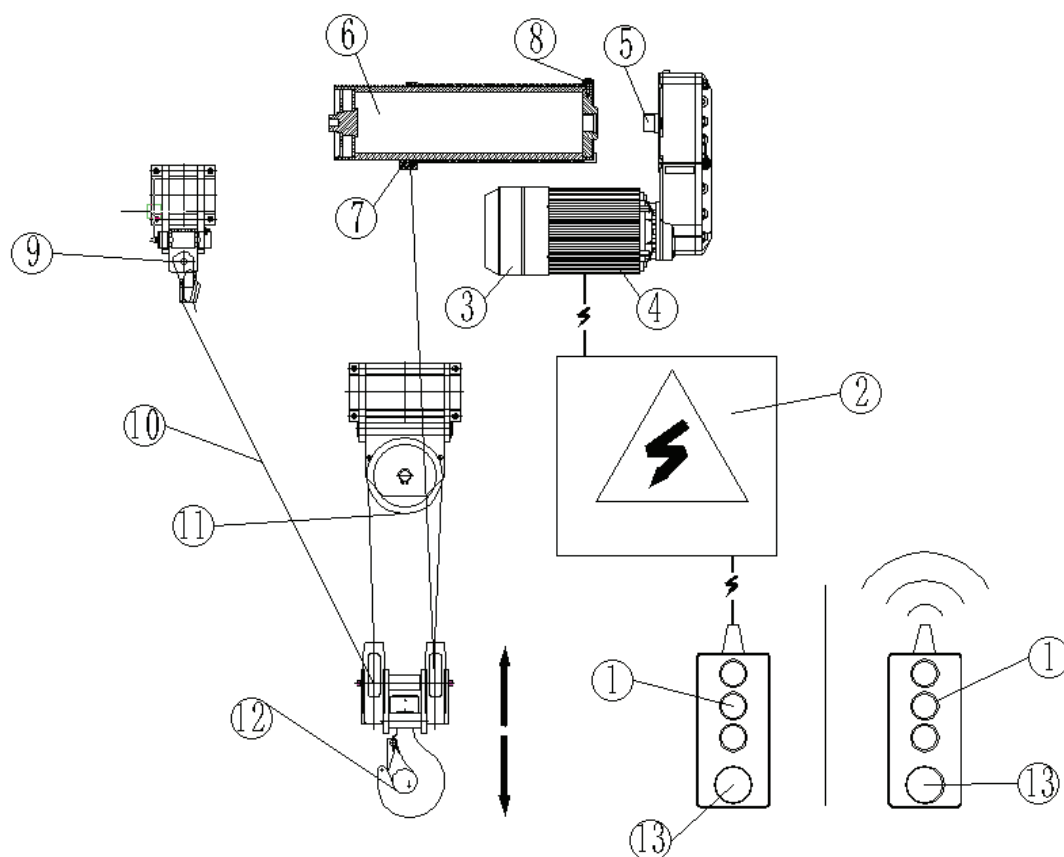
SCAN ME!

การตรวจระบบเครื่องกล และระบบไฟฟ้า ประจำวัน

- 01 ตรวจสอบระดับน้ำในบ่อสูบน้ำ
- 02 ตรวจสอบระดับน้ำมันหล่อลื่น Thrush Bearing
- 03 ตรวจสอบกระแสแรงดันไฟฟ้า ระดับน้ำและอื่นๆ
- 04 ตรวจสอบหาวัสดุแปลกปลอมที่เข้ามา มาในบ่อสูบน้ำ
- 05 ตรวจสอบการทำงานของ ระบบระบายความร้อน Thrust Bearing

4.2 Main Functions

4.2.1 Hoisting Function



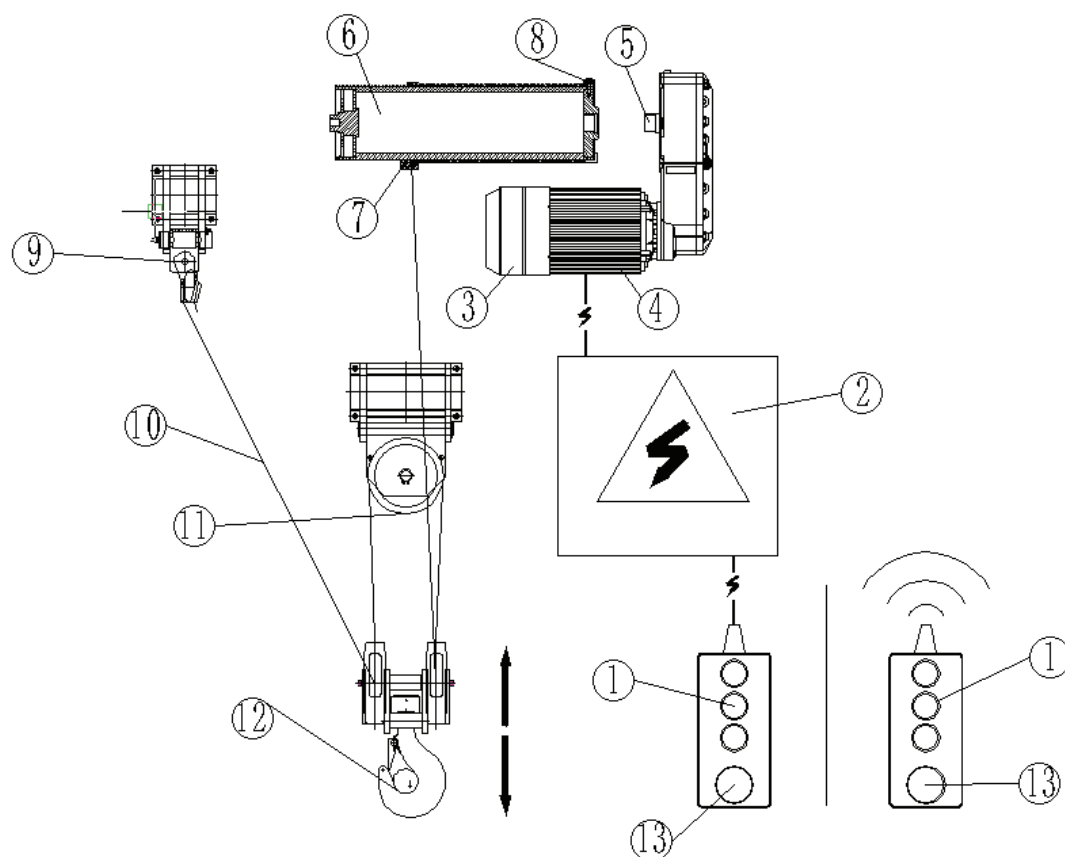
Pos.	Part	Pos.	Part
1	Pendant or radio controller	8	Rope drum clamp
2	Electric panel	9	Rope anchorage
3	Brake	10	Wire rope
4	Motor	11	Sheaves
5	Hoisting gear	12	Hook
6	Drum	13	Emergency stop button
7	Rope guide		

How the hoisting function works

- When the relevant button or joystick is activated on the pendant or radio controller (1), the hook (12) moves vertically provided that certain conditions are met.
- The product has a variety of automatic built-in safety features which, for example, prevent lifting overload, limit travelling movements or prevent all the movements if the emergency stop button (13) is engaged. In addition, there can be operating limits (set by the owner/operator) which also limit movements under certain conditions.
- When a hoisting button or joystick is activated on the controller (1), a command is sent to the electric panel (2).
- The direction (up or down) of the hoist depends on which button or joystick is pressed. The speed of the hoist depends on which step is activated.
- The electric panel (2) controls the brake (3) and motor (4) in accordance with inputs from the

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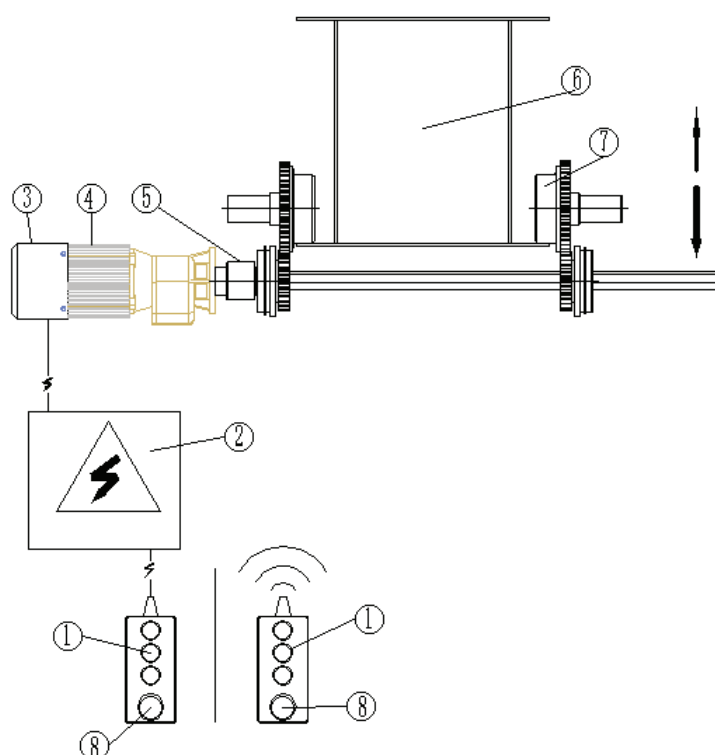
operator, together with signals from the sensors and safety devices.

- When the motor (4) is not being driven, the brake (3) holds the motor in place, preventing it from turning unintentionally and the load from sliding down.
- When a signal is transmitted from the controller (1), the electric panel (2) supplies power to the motor (4) and releases the brake (3).
- The motor (4) drives the hoisting gear (5) which drives the hoisting drum (6). The hoisting gear (5) reduces the rotation speed and increases the torque to lift the load.
- The wire rope (10) winds or unwinds when the hoist drum (6) rotates. The rope guide (7) guides the wire rope into the correct groove of the drum.
- One end of the rope is fixed to the hoisting drum (6) with a rope clamp (8). The other end of the rope is connected to the rope anchorage (9).
- The rope passes around the rope sheaves (11) into the rope anchorage (9). The hook block rises and falls when the rope winds onto or unwinds from the hoisting drum (6).
- In normal use, when the up or down control is released on the controller (1), the control closes the main brake and brings the hoist to a gradual, controlled stop.
- In emergency situations, the emergency stop button (13) on the controller (1) can be activated. This causes an instant stop of all movements by cutting power to the motors and applying the brakes.

NOTICE

Only use the emergency stop button to stop movement in the event of malfunction or other emergency situation. Using the emergency stop button can cause the load to swing unexpectedly.

4.2.2 Travelling Function



Pos.	Part	Pos.	Part
1	Pendant or radio controller	5	Travelling gear
2	Electric panel	6	Rail
3	Brake	7	Wheel
4	Motor	8	Emergency stop button

How the travelling function works

- When the relevant button or joystick is activated on the pendant or radio controller (1) the trolley travels horizontally along the track (6).
- The product has a variety of automatic built-in safety features which, for example, limit travelling movements or prevent all the movements if the emergency stop button (13) is engaged. In addition, there can be operating limits (set by the owner/operator) which also limit movements under certain conditions.
- When a travelling button or joystick is activated on the controller (1), a command is sent to the electric panel (2).
- The horizontal direction of the hoist depends on which button or joystick is pressed. The speed of the trolley depends on which step is activated.
- The electric panel (2) controls the brake (3) and motor (4) in accordance with inputs from the operator, together with signals from the sensors and safety devices.
- When the motor (4) is not being driven, the brake (3) holds the motor in place, preventing it from turning unintentionally.
- When a signal is transmitted from the controller (1), the electric panel (2) supplies power to the motor (4) and releases the brake (3).
- The motor (4) drives the travelling gear (5) which drives the wheel (7). The travelling gear (5) reduces the rotation speed and increases the torque to move the trolley.
- In normal use, when the travel direction control is released on the controller (1), the travel motion moves to a gradual, controlled stop and sets the parking brakes (inverter).
- In emergency situations, the emergency stop button (8) on the controller (1) can be activated. This causes an instant stop of all movements by cutting power to the motors and applying the brakes.

NOTICE

Only use the emergency stop button to stop movement in the event of malfunction or other emergency situation. Using the emergency stop button can cause the load to swing unexpectedly.

4.2.3 Safety Functions

Hoisting unit

Device	Description
Emergency stop switch	The emergency stop switch is used to turn off power to the system in a dangerous situation. The emergency stop switch cuts the supply voltage to the system from the main contactor. Always eliminate the danger before releasing the emergency stop switch. There are several types of emergency stop switches but they are always red.

Hoisting limit switch	The hoisting limit switch is adjusted to prevent the hoist from traveling too high or low. The upper limit switch slows down and stops the movement so that only lowering is possible. The lower limit switch stops the downwards movement so that only lifting is possible.
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Hoisting limit switches shall always be adjusted by authorized service personnel. Verify that adjustment has been done before using the product.

Overload protection	The overload device protects the machinery against overloading. Overload occurs at around 110% of the rated capacity of the crane or hoist. When the overload device activates, it prevents further lifting but you can still lower the load. Never use the overload device to assess the weight of the load.
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Fault supervision	Fault supervision stops the motion of the product when one or more supervised safety features indicates a fault. Restarting is possible after the fault has been cleared. Note that some faults are direction dependent and running in the opposite direction is enough to terminate the fault.
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Phase supervision	Phase supervision protects the machinery by detecting if a supply phase is missing or if the supply phase order is incorrect. When a fault is detected, no motions are possible until the power supply has been repaired.
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Trolley

Device	Description
Emergency stop switch	The emergency stop switch is used to turn off power to the system in a dangerous situation. The emergency stop switch cuts the supply voltage to the system from the main contactor. Always eliminate the danger before releasing the emergency stop switch.

Trolley anti-collision device(Optional)	The trolley anti-collision device prevents hoists on the same bridge from colliding at high speed. The exact operation depends on the hoist. The device can slow down and/or stop the trolleys when they come close together, and it may still allow the trolleys to meet at slow speed. Driving the trolleys away from each other is possible.
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4.3 Signs

4.3.1 Safety Signs

Safety signs inform the operator about potential hazards and also about special features concerning the product's operation.

	Failure to avoid dangers identified by these signs can result in death or serious injury.
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Sign	Description	Location on product
	Danger of electric shock	On electric cubicle and other cubicles.

	Danger of getting hurt	Places where serious injury may occur.
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