

FLANGED HEATER FOR OIL

JIS nominal diameter 50 (50A) flange type
JIS nominal diameter 80 (80A) flange type

INSTRUCTIONS MANUAL

Thank you for your choosing our product.

Read the instructions before use and remember to keep in the convenient place for future reference.



FOR SAFE USE OF THIS PRODUCT

We use the following symbols for safety.



WARNING

Improper use may cause the danger of death or injury.



CAUTION

Improper use may cause the danger of light injury or property damage.

WARNING

- Turn off the heater immediately if oil is insufficient in the container.

Keep the heating part below oil surface constantly. Otherwise it may cause fire.



- Do not use broken or leaky containers.

Check the container carefully before turning on. Insufficient oil may cause fire or electric shock.



- Screw up the power cable tightly with the terminal part.

Otherwise it may cause fire, electric shock or failures.



- Connect the ground terminal with the container.

Otherwise it may cause electric leakage or shock.



- Do not use with any power voltage other than the indicated.

Otherwise it may cause fire, electric shock or failures.



- Do not alter or deform the heater.

Otherwise it may cause fire, electric shock or failures.



- Use containers made of metals, not of plastic material.

Otherwise it may cause fire and electric shock.



- Do not heat any other liquids than oil.

Otherwise it may cause fire and electric shock.



WARNING

- Do not use the heater for fuel oil, such as gasoline, light oil or kerosene.

Otherwise it may cause explosion or fire.



- Do not sink whole parts of the heater into oil.

Otherwise it may cause electric shock or failures.



- Do not touch the heater with wet hands.

Otherwise it may cause electric shock.



- Use the heater in oil at temperatures below 160 degree.

Otherwise it may cause fire, electric shock or failures.



CAUTION

- Use the automatic oil feeding equipment.

If you leave the heater for hours without oil feeding equipment, turn off the heater for safety.



- Turn off and replace the heater.

When you need to replace the heater, turn off and drain oil before replacement. Otherwise it may cause electric shock.



- Do not touch the heater with bare hands just after turning off.

Otherwise it may cause burns.



- Keep the connecting part with power supply at temperatures below 110 degree.

Otherwise it may cause fire, electric shock or failures.



- Do not use the heater in the following condition. It may cause fire, electric shock, or failures.

- In case the heater merges into deposition in oil.
- In case foreign substances attach on the heater.
- In case the heating part is out of the oil surface.
- In case the terminal part is below the oil surface.
- In case the terminal part is contacted with oil.



- Do not mount the heater vertically in the container.

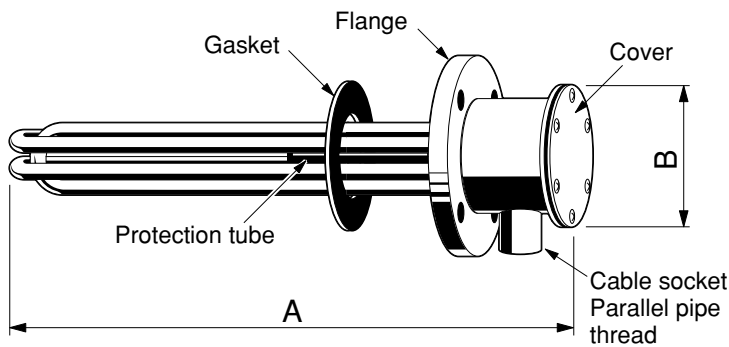
Remember to mount the heater horizontally with the container, otherwise it may cause failures.



INSTRUCTIONS FOR SAFE USE

- Keep the heating part into oil while turning on. Otherwise it is overheated and may cause fire or early burnout of wires.
- After long-term use, carbides or other substances are attached on the surface of the sheath. They may cause less capability of the heater, early burnout of wires, or corrosion of metal sheath. Check the heater periodically and remove them carefully.
- Screw up the power cable tightly with the terminal part.
- Do not use the heater for heating any liquids other than oil. When you need to heat other liquids, such as water, use proper heaters of HAKKO.
- Do not apply any paste or grease on the gasket. It may reduce friction force and break strength and cause leakage.

NAMES AND DIMENSIONS OF PARTS



Stainless steel sheath type

Sheath:	Electro-polished stainless steel (SUS316L)
Flange:	Electro-polished stainless steel (SUS304) (JIS Nominal diameter 50 / Nominal pressure 5K)
Protection tube:	Nickel-plated steel tube (STKM11A)
Cap:	SPCC (Nickel-plated)
Gasket:	asbestos-free (t1.5)

Iron sheath type

Sheath:	Nickel-plated steel tube (STKM11A)
Flange:	Nickel-plated steel tube (SS400) (JIS Nominal diameter 50 / Nominal pressure 5K)
Protection tube:	Nickel-plated steel tube (STKM11A)
Cap:	SPCC (Nickel-plated)
Gasket:	asbestos-free (t1.5)

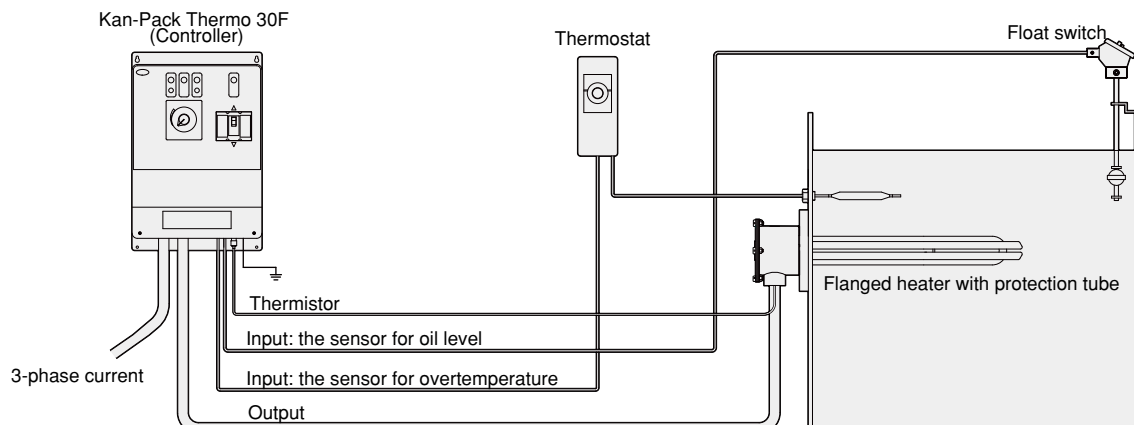
JIS nominal diameter 50 flange type [φ130×t14 4-φ15holes] maximum oil temperature 160°C (2.5W/cm²)

Sheath	Model number	Product code	Voltage	Wattage	Dimensions (mm)			Outside diameter / Number of heaters	Protection tube		Weight (kg)	Connection (“●”: Power supply)			
					Nominal diameter of parallel pipe thread	A	B		Size (mm)				Controller type		
									Inside diameter	Effective length					
Stainless steel sheath	SFA3010	01573110	3-phase 200V	1kW	G 3/4	250	100	φ12 / three	10.2	175	B, A3	3.0	3-phase 		
	SFA3020	01573120	3-phase 200V (single phase) 200V	2kW		440				295				C, A3	3.4
	SFA3030	01573130	3kW	610		4.1									
Iron sheath	FFB3010	01170110	3-phase 200V	1kW	G 3/4	250	100	φ12 / three	10.2	175	B, A3	3.0	3-phase (single phase) 		
	FFB3020	01170120	3-phase 200V (single phase) 200V	2kW		370				295				C, A3	3.4
	FFB3030	01170130	3kW	570		4.1									

JIS nominal diameter 80 flange type [φ180×t14 4-φ19holes] maximum oil temperature 160°C (2.5W/cm²)

Sheath	Model number	Product code	Voltage	Wattage	Dimensions (mm)			Outside diameter / Number of heaters	Protection tube		Weight (kg)	Connection (“●”: Power supply)		
					Nominal diameter of parallel pipe thread	A	B		Size (mm)				Controller type	
									Inside diameter	Effective length				
Stainless steel sheath	SFA5010	01573010	3-phase 200V	1kW	G 3/4	250	128	φ12 / three	10.2	175	B, A3	4.3	3-phase 	
	SFA5020	01573020	2kW	440		295				C, A3				5.0
	SFA5030	01573030	3-phase 200V (single phase) 200V	3kW										610
	SFA5050	01573040	5kW	780		φ15 / three		7.0						
Iron sheath	FFB5010	01170010	3-phase 200V	1kW	G 3/4	250	128	φ12 / three	10.2	175	B, A3	4.4	3-phase (single phase) 	
	FFB5020	01170020	2kW	370		295				C, A3				4.8
	FFB5030	01170030	3-phase 200V (single phase) 200V	3kW										570
	FFB5050	01170040	5kW	740		φ15 / three		7.0						

Sample connection using the controller “Kan-Pack Thermo 30F” of HAKKO.



HOW TO USE

- ① Mount the heater horizontally in the container.

⚠ CAUTION

If you need to mount the heater vertically, the equipment must be highly designed for safety to control oil supply, temperature, and the position of sensors.

- ② Connect the heater with the controller and the sensors of proper capacity.

- ③ Put oil into the container mounted with the heater.

⚠ CAUTION

Check if the whole heating parts are below oil surface.

⚠ CAUTION

Check if the container and the connecting part of the heater have no leakage.

- ④ Screw up the power cable tightly with the terminal part.

⚠ CAUTION

When you heat oil at the temperatures above 100 degree, use heat resistance wire, such as glass fiber covered or silicone rubber insulated wire.

- ⑤ Adjust the dial of the controller to set temperature.

⚠ CAUTION

Set temperatures below 160 degree.

- ⑥ Turn on the circuit breaker and start heating.

- ⑦ Turn off the circuit breaker after finishing heating.

AFTER-SALE SERVICE

● **If you have any questions,**

If you have any questions about our products, contact with your distributors, or the Sales Head Office of HAKKO ELECTRIC CO., LTD. The addresses and phone numbers are as follows.

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