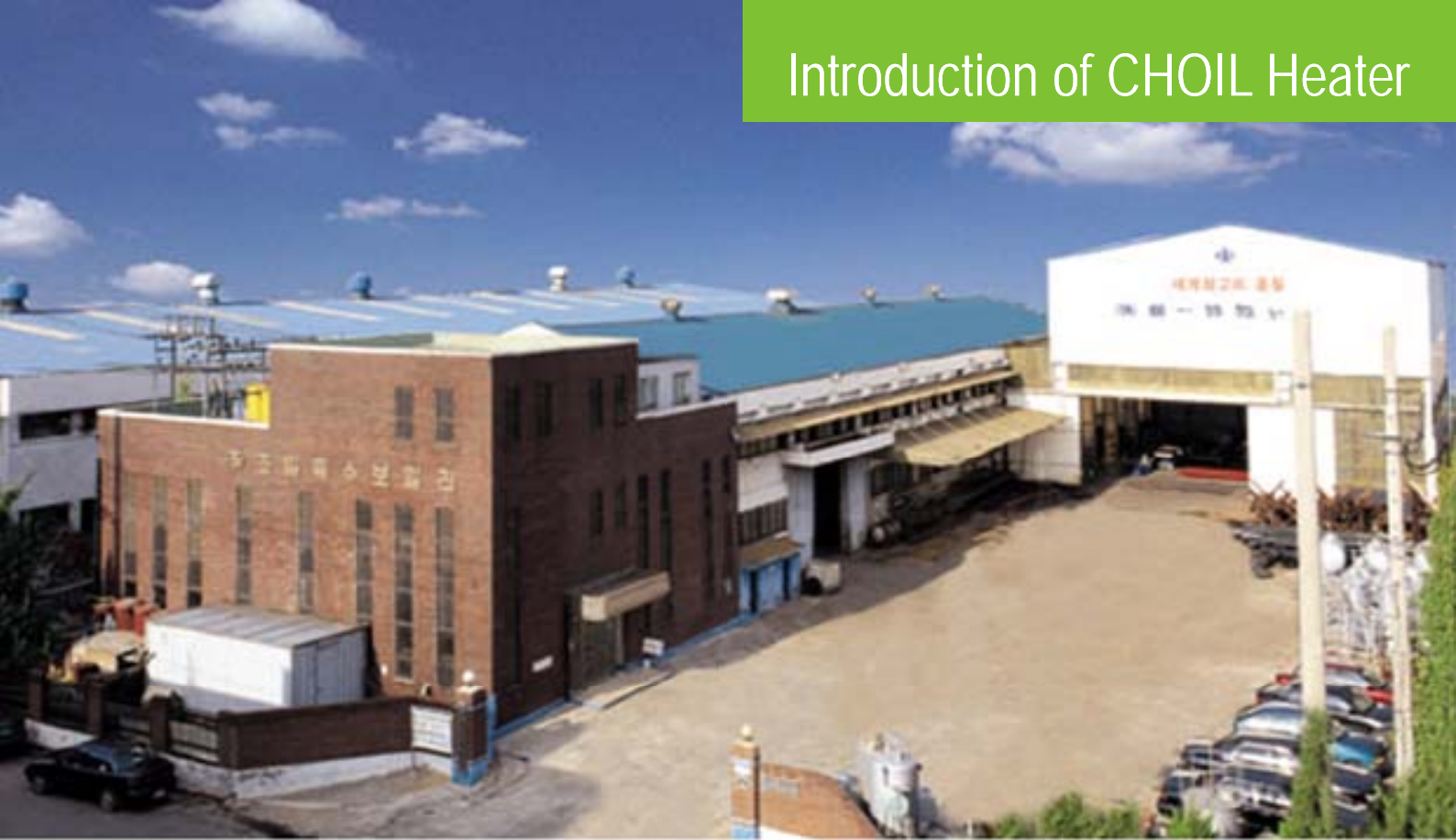




Save Energy, Save Your Future!



한국 朝一특수보일러  
CHO IL THERMAL OIL HEATER CO., LTD.



## Introduction of Company

### We, CHOIL

design, manufacture and install optimized equipment at various heat-required facilities. CHOIL's customized equipment will make sure both stable operation of the equipment at your company and energy save. CHOIL is making its best efforts to produce customized products and pursuing green technology by maximizing energy efficiency-reduction in greenhouse gas and air pollution.

## Introduction of CHOIL Thermal Oil Heater

### Headquarter & Factory

**Address :** 2Na-309Ho, Sihwa industrial complex, # 1261-8, Jeongwang-dong, Siheung-si, Gyeonggi-do, Korea

**TEL :** 031.498.4131 (Rep)

**FAX :** 031.498.4130

**Homepage :** <http://www.choil.com>

**E-mail :** CHOIL84@hitel.net

### Branches

**Domestic:** Busan branch office

Daegu branch office

**Overseas:** China co-operation factory  
(Shengwei, Shandong in China)





# COMPANY HISTORY

## Foundation period – 1984~1988

Founded incorporation, developed CIH type thermal oil heater

## Construction period – 1989~1998

Founded headquarter office and production plants, contracted a technical partnership with Japanese company, 'Soken', developed high efficient low nox CIV type thermal oil heater

## Adjustment period/development period – 1999~2008

Awarded one million dollar export tower prize

Developed high efficient Air pre-heater by cooperation with technical research team of Korea Polytechnic University

Registered to patent for high efficient econo-thermal oil heater

## Leaping period – 2009

~ near future



# Various Usage and feature of CHOIL Thermal Oil Heater

Various Reactors	Hot Press For PCB, Wood etc.,	Various Heat Exchanger	Paint Drying Oven	Refinery tower
Various Fabric Drying machine	 As there is no internal corrosion, Its life is semi-Permanent	 Precise temperature control	 Superb stability producing high temperatures at low pressure	Various Coating machine
Tenter machine	 The perfect safety machines possible unattended operation	 Both low and high temperatures available (temperatures range : -40~600°C)	 Closed-cycle system is to maximize energy	Tank heating system
Kneader	 Minimize the required floor space with a compact system design	 Will not freeze or breakdown in either temperature environments	 No industrial water required.	Various Roll heating
	 Reduce production costs through fuel express reduction			
Re-boiler	Steam Generator	Asphalt melting system	Cell coater	Hot air Generator

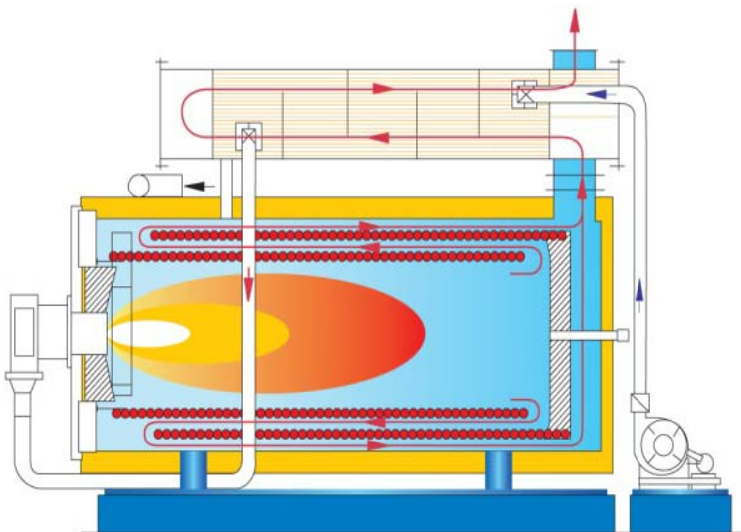


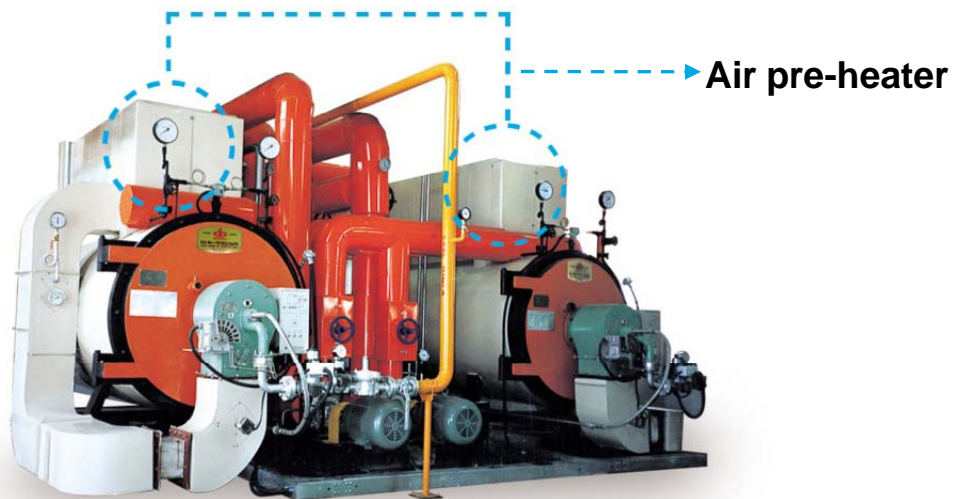
## Econo Thermal Oil Heater



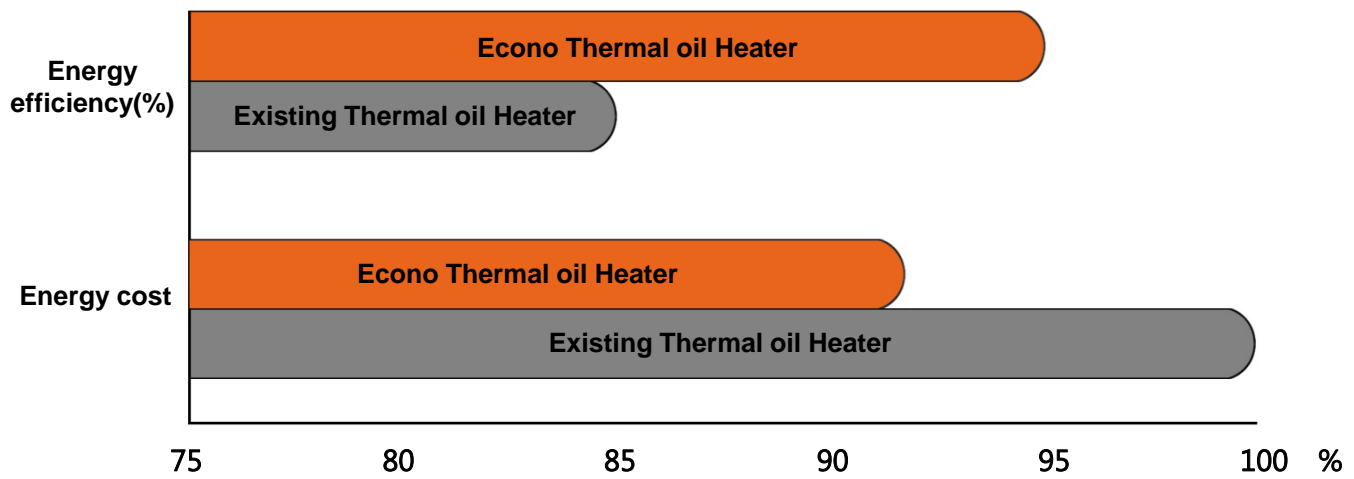
### Advantages of CHOIL Econo Thermal Oil Heater

- Equipped with special air pre-heater which co-developed by CHOIL and Korea Polytechnic University
- Easy assembling and disassembling of Air pre-heater on thermal oil heater
- Compact structure by on the thermal oil heater
- Cleaning and maintenance are easy by opening both front & back doors
- Reuse heat that goes out chimneys and reduce energy-use in an Eco-friendly way
- Significantly reduce **exhaust gas temperature from 300 degrees to 100 degrees**
- Manufacture customized products that meet customers' required specifications from A~Z
- Provide the best quality products produced by 25 years old craftsmanship
- Easy maintenance by opening and shutting of the front wind box door





❖ Comparison of Energy Use between Existing “Thermal Oil Heater” and “Econo Thermal Oil Heater”



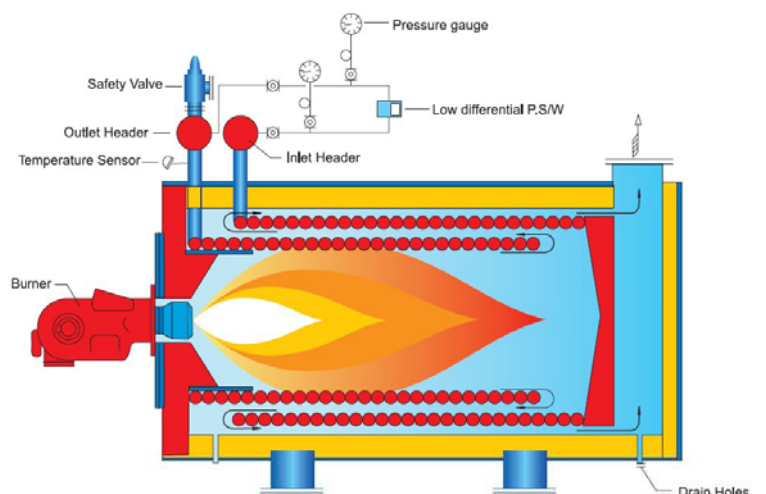


## CIH-Type Thermal Oil Heater



### ● Features of CIH-type Thermal Oil Heater

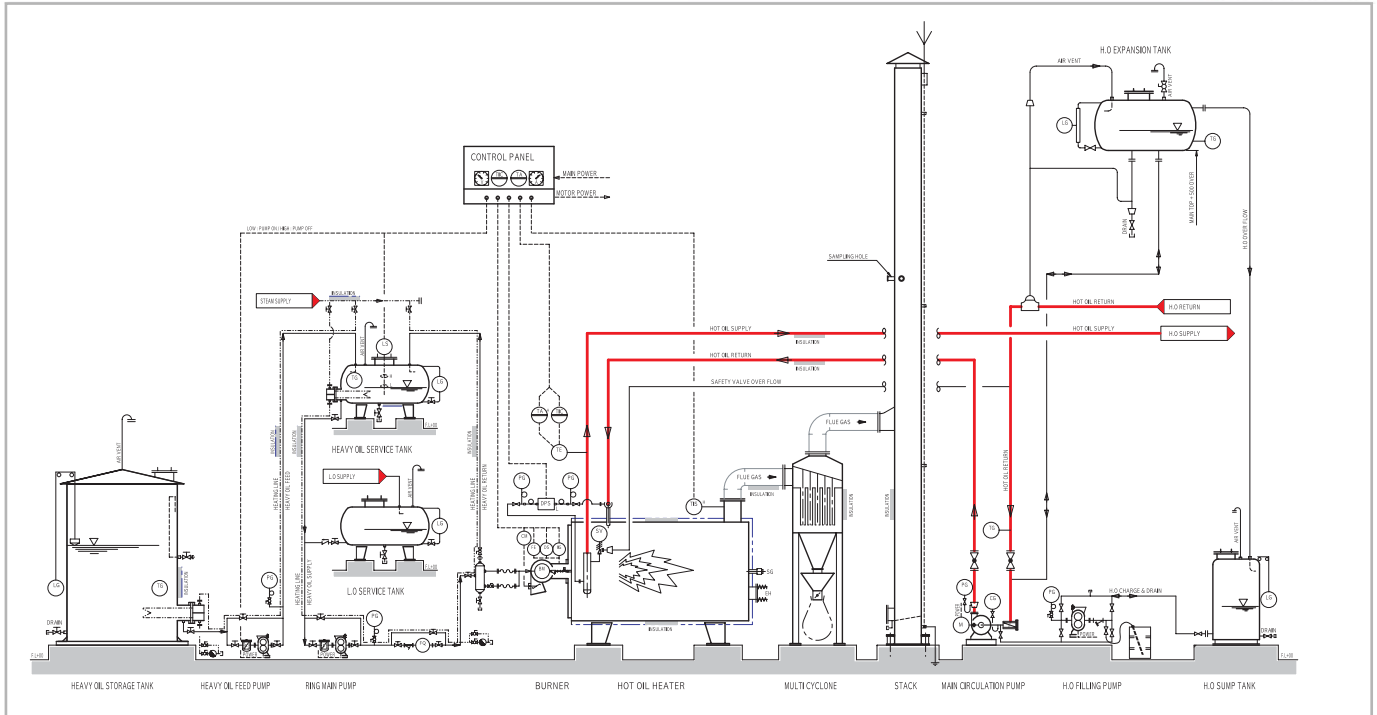
- Convenient maintenance & repair
- Easy cleaning by Door type Windbox
- Various selection of Burner
- Fully automatic unmanned operation
- Possibly installation in Low ceiling place
- No possibility of damages on Windbox or Burner from residual heat
- Easy check of several Safety devices & Instruments
- Appropriate for under 6.0 million kcal/hr capacity heaters



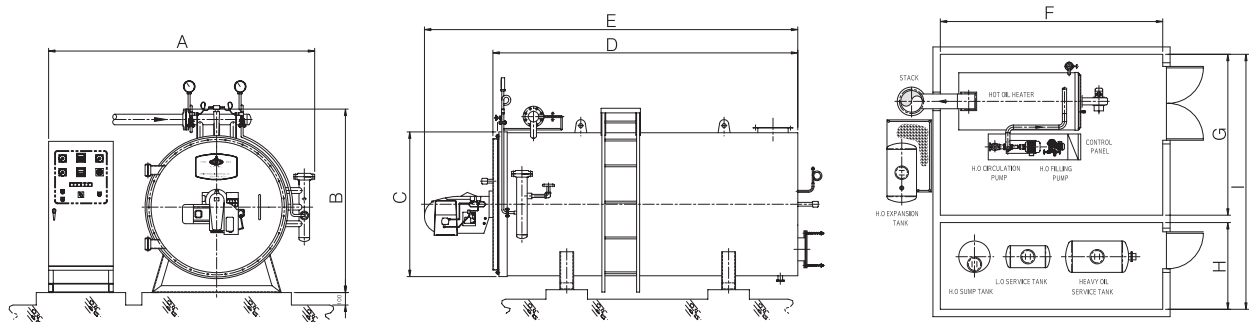
# FLOW & SPECIFICATION

## ❖ Flow Diagram

▼ B/C fuel standard



## ❖ Specification



MODEL			UNIT	CIH-20	CIH-30	CIH-40	CIH-50	CIH-60	CIH-80	CIH-100	CIH-120	CIH-150	CIH-180	CIH-200	CIH-250	CIH-300	CIH-400	CIH-500	CIH-600
HEAT CAPACITY			kcal/hr	200,000	300,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,500,000	1,800,000	2,000,000	2,500,000	3,000,000	4,000,000	5,000,000	6,000,000
CONSUMPTION OF FUEL	LNG	10,500kcal/Nm3	Nm3/Hr	22.4	33.6	44.8	56.0	67.2	89.6	112.0	134.5	168.1	201.7	224.1	280.1	336.1	448.2	560.2	672.3
	BC	9,750kcal/Kg	Kg/Hr	24.1	36.2	48.3	60.3	72.4	96.5	120.7	144.8	181.0	217.2	241.3	301.7	362.0	482.7	603.3	724.0
	DIESEL	10,200kcal/Kg	Kg/Hr	23.1	34.6	46.1	57.7	69.2	92.3	115.3	138.4	173.0	207.6	230.7	288.4	346.0	461.4	576.7	692.0
DIMENSION	HEATER BODY & SKID	A	mm	1865	2097	2113	2161	2314	2520	2527	2604	2791	2900	2971	3265	3403	3490	3610	3960
		B	mm	1460	1463	1463	1511	1717	1870	1881	1954	2150	2252	2321	2654	2653	2740	2840	3190
		C	mm	1065	1070	1136	1172	1328	1460	1544	1608	1792	1894	1962	2172	2266	2350	2450	2800
		D	mm	1943	1963	2217	2503	2642	3024	3332	3677	3972	4331	4448	4970	5462	5680	6200	6250
		E	mm	2416	2436	2744	3073	3212	3788	4096	4441	4763	5795	5393	5915	6411	6880	7400	7450
	HEATER ROOM	F	mm	4081	4100	4480	4845	4140	5848	6240	6649	7128	7589	8000	8687	9277	10380	10900	15950
		G	mm	3865	4097	4113	4161	4314	4520	4527	4604	4791	4900	4971	5256	5403	5490	5610	5960
		H	mm	1800	1800	1800	2000	2000	2000	2000	2500	2500	2500	3000	3000	3000	3000	3000	3000
		I	mm	5765	5997	6013	6261	6414	6690	6627	7204	7391	7500	8071	8356	8503	8490	8610	8960
APPROX. WEIGHT			Ton	1.9	2.0	2.2	2.5	3.0	3.5	3.8	4.3	5.4	6.0	6.7	9.8	12.2	15.0	18.0	23.0
OIL CHARGE AMOUNT			Liter	180	200	250	300	350	530	650	770	1,150	1,400	1,600	2,500	3,000			

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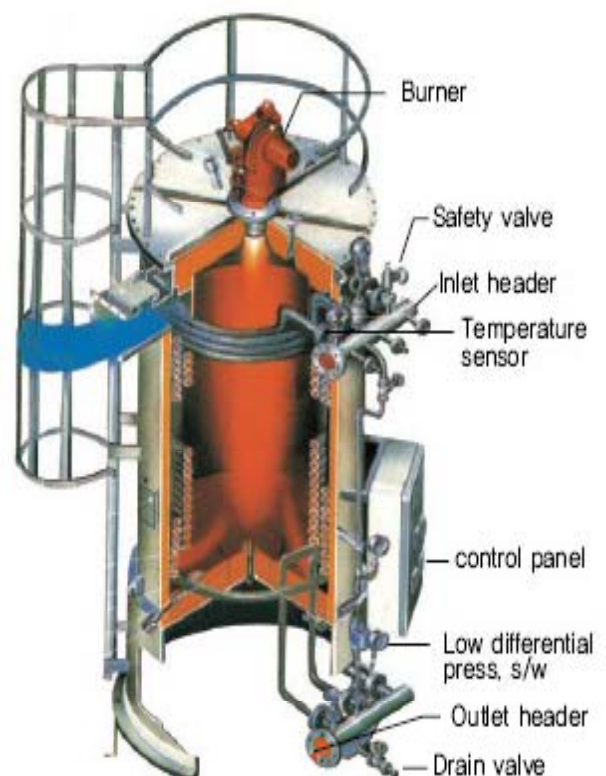


## CIV-Type Thermal Oil Heater



### ● Features of CIV-type Thermal Oil Heater

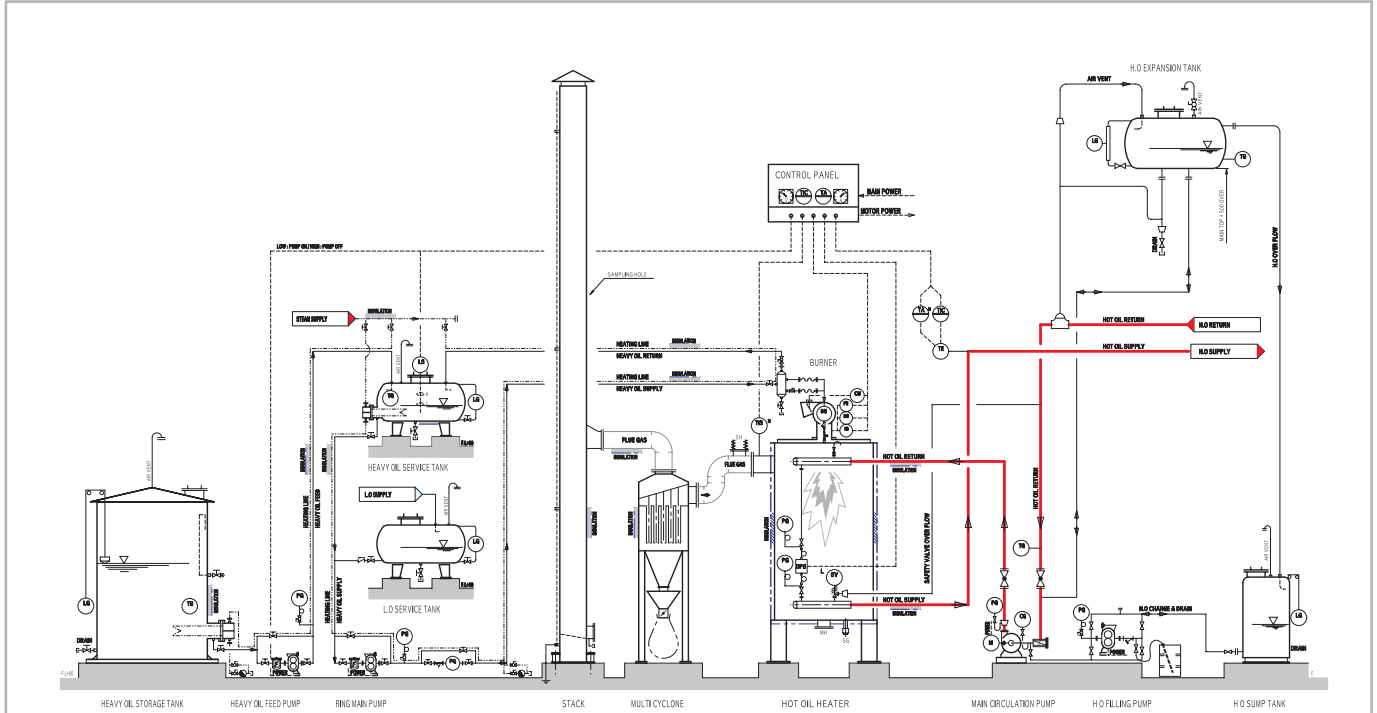
- Installation in small space
- No residual oil in case of oil draining or exchanging
- Low NOx Structure
- Easy checking and cleaning
- Fully automatic unmanned operation
- Easy installation both indoor and outdoor
- Possibly manufacturing for Big capacity
- Elegant design
- Appropriate for Heaters easy & often drain required (Salt boiler, Edible oil boiler, etc.)



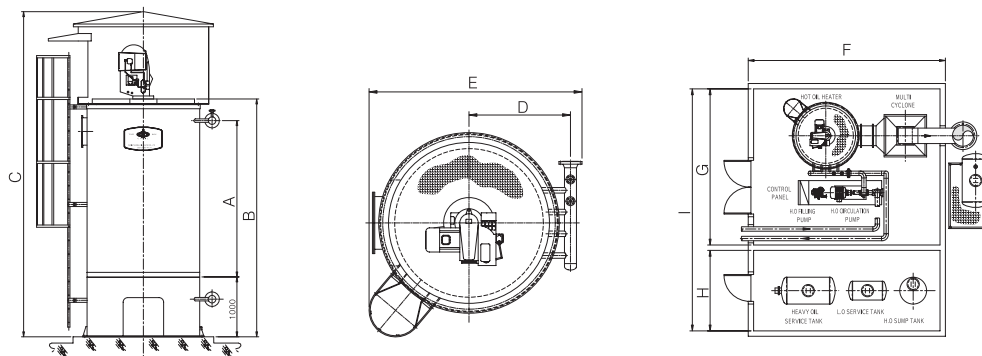
# FLOW & SPECIFICATION

## ❖ Flow Diagram

▼ B/C fuel standard



## ❖ Specification



MODEL			UNIT	CIH-20	CIH-30	CIH-40	CIH-50	CIH-60	CIH-80	CIH-100	CIH-120	CIH-150	CIH-180	CIH-200	CIH-250	CIH-300	CIH-500	CIH-800	CIH1000
HEAT CAPACITY			kcal/hr	200,000	300,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,500,000	1,800,000	2,000,000	2,500,000	3,000,000	4,000,000	5,000,000	6,000,000
CONSUMPTION OF FUEL	LNG	10,500kcal/Nm3	Nm3/Hr	22.4	33.6	44.8	56.0	67.2	89.6	112.0	134.5	168.1	201.7	224.1	280.1	336.1	560.2	907.1	1,133.8
	BC	9,750kcal/Kg	Kg/Hr	24.1	36.2	48.3	60.3	72.4	96.5	120.7	144.8	181.0	217.2	241.3	301.7	362.0	603.3	976.8	1,221.0
	DIESEL	10,200kcal/Kg	Kg/Hr	23.1	34.6	46.1	57.7	69.2	92.3	115.3	138.4	173.0	207.6	230.7	288.4	346.0	576.7	933.7	1,167.2
DIMENSION	HEATER BODY & SKID	A	mm	1940	2200	2500	2650	3050	3350	3700	3950	4400	4548	5070	5562	5800	7700	11800	14700
		B	mm	3240	3500	3800	3950	4300	4650	5100	5300	5700	5850	6370	6962	7000	6500	13000	16000
		C	mm	5240	5500	5800	5150	2300	6650	7100	7300	7700	7850	8370	8962	9000	11500	15000	18000
		D	mm	730	800	830	860	880	900	930	980	1050	1300	1350	1400	1700	2050	2150	2350
		E	mm	1557	1563	1611	1817	1970	1981	2054	2252	2421	2454	2753	3100	3500	3600	7400	3800
	HEATER ROOM	F	mm	4114	4126	4222	4634	4940	4962	5108	5504	5842	5908	6506	6806	7000	8000	9500	11000
		G	mm	4257	4263	4311	4517	4670	4681	4754	4952	5121	5154	5453	5853	6100	6500	7000	8000
		H	mm	1800	1800	2000	2000	2500	2500	2500	3000	3000	3000	3000	3000	3000	3300	3500	4000
		I	mm	6157	6163	6411	6617	6770	7281	7354	7552	8221	8254	8553	8953	6100	6800	10500	12000
APPROX. WEIGHT			Ton	2.0	2.5	2.5	2.7	3.2	3.8	4.2	4.6	5.8	6.5	7.0	10.5	14.0	24.0	30.0	38.0
OIL CHARGE AMOUNT			Liter	180	200	250	300	350	530	650	770	1,150	1,400	1,600	2,500	3,000	7,000	11,300	14,500

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# Electric Thermal Oil Heater



## ● CHOIL Electric Thermal Oil Heater

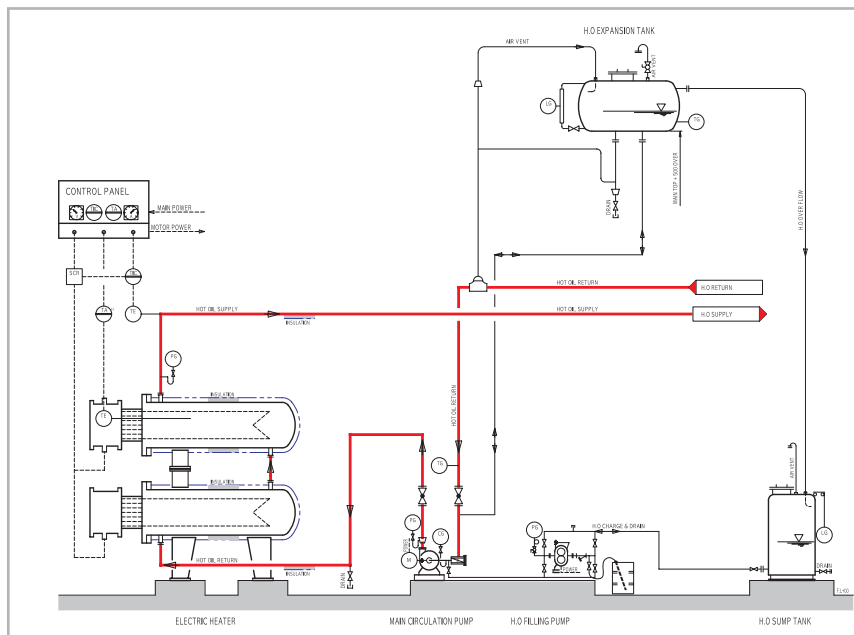


## ● Features of Electric Thermal oil heater

- **Economical efficiency**
  - When compared to general thermal oil heater, initial investment cost is low
  - With low heat loss, its efficiency is more than 98%
  - Rapid cooling and heating is possible by minimizing amounts of thermal oil
- **Convenience**
  - Can be installed in a small space since it is compact
  - Doesn't require industrial water
  - Unmanned automatic operation is possible
  - First-time users can easily control the temperature and operate the heater
  - Users don't have to buy fuel since it uses electricity
- **Safety**
  - Various safety devices included in the system
- **Precision**
  - Correct and precise automatic temperature control through SCR proportion control (0.5 degree)
  - Heaters with various capacity that meet specifications customers need can be manufactured (10~1,000kw)
- **Eco-friendly**
  - No harmful exhaust gas by using electricity

## FLOW & SPECIFICATION

### ❖ Flow Diagram



△ 삼성SDI (50kW × 4sets, 2001)

### ❖ Specification

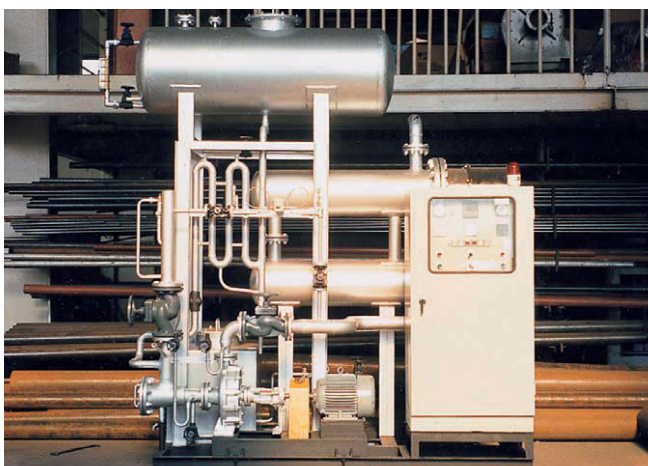
MODEL	UNIT	CIE-20	CIE-30	CIE-40	CIE-50	CIE-100	CIE-200	CIE-300
HEAT CAPACITY	KW	30	20	40	50	100	200	300
	Kcal/hr	17,200	25,800	34,400	43,000	86,000	172,000	258,000
DIMENSION	A	mm	1850	1880	1900	2000	2300	2500
	B	mm	800	850	950	1000	1200	1500
	C	mm	1900	2100	2300	2300	2500	2700

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△ 웰드써킷 (120kW, 2004)



△ 프라스킴 (100kw, 1995)



△ 창우 (100kw, 2002)



## Air Pre-heater



CHOIL THERMAL  
OIL HEATER  
CO.,LTD.



### ● CHOIL Air Pre-heater's merit

- By reusing exhausted heat that used to be just discharged to the air  
You can have fuel reduction effect of 5~10%
- Able to additionally attach it to existing boiler because it is detaching/  
attaching type
- 1:1 design according to user's environment
- Cooperatively develop it with Korea Polytechnic University and apply  
for utility model and patent (application No.0304704)

*Save Energy, Save Your Future!*

## Other product series



**Heat exchanger for fryer**



**Heat exchanger (cooling condenser)**



**R.T.C Unit**



**Waste heat Exchanger**