

RAPID MELTING ENERGY SAVING ALUMINIUM MELTING FURNACE (ER Model)

This furnace design is developed from our experience and technical know-how of melting aluminium in excess of 250,000 tons/year. Built specially for aluminium casting and aluminium diecasting industries, this furnace is capable of producing very high quality melts. The furnace comprises a preheating chamber, a holding chamber and an automatic material charging machine (skip elevator). Its compact design not only saves space and energy, it is also safe to operate. The temperature of the molten metal can be regulated and a level indicator/ probe allows the surface level of the molten metal to be monitored. For handling convenience, an optional automatic conveyor driven dispenser can be incorporated to transport molten metal from the holding chamber of furnace to individual holding pot furnaces located elsewhere.

Some of the outstanding characteristics of the ER furnace include :-



1. SUPERIOR ALUMINIUM MELT QUALITY

Special burners carefully selected by DAIKI ensures that hard spot formation and gas absorption problems are minimal. This translates into higher quality melts as molten metal that flows into the holding chamber has very little oxidation.

2. CALM SURFACE OF MOLTEN METAL AND LOW OXIDATION LOSSES

The surface of the molten metal is always calm because the installed burners are designed to be non-turbulent. As such, it is possible to expect oxidation losses to be lower than 1%

3. LOW NOISE POLLUTION

The furnace operates at a relatively low noise level of about 80 phon (dB).

4. EASE OF CLEANING

A lot of thought has been put into the design of the furnace to ensure that there are no dead corners in the furnace chamber. This prevents hard clumps of oxidants from sticking onto the furnace refractories and makes the chore of cleaning very easy.

5. LOW MAINTENANCE COST

Built for rugged operation, the cost of maintaining the furnace is low. From records kept to-date, it is possible for this type of furnace to be maintenance-free for more than 2 years.

6. LOW ENERGY COST (DURING OPERATION)

High thermal efficiency results in low energy cost. Under optimum conditions, fuel consumptions can be less than 550,000 kcal/metric ton.

7. CHOICE OF FUELS

The furnace can be designed to run on the following fuels:-

Gas : Town/City gas, Natural gas, Propane, Butane
Oil : Heavy oil crude A, Diesel oil, Kerosene, etc.

ER Furnace Specification

Type	Melting Rate (Kg/Hr)	Holding Capacity (Kg)	Melt. Burner Cap. (Kcal/Hr)	Hold. Burner Cap. (Kcal/Hr)
ER-500	500	1,300	400,000	200,000
ER-700	700	1,600	500,000	200,000
ER-1000	1,000	2,000	600,000	300,000
ER-1500	1,500	3,000	900,000	400,000
ER-2000	2,000	4,000	1,200,000	500,000
ER-2500	2,500	5,000	1,500,000	600,000

★ Sizes larger than ER-2500 are available

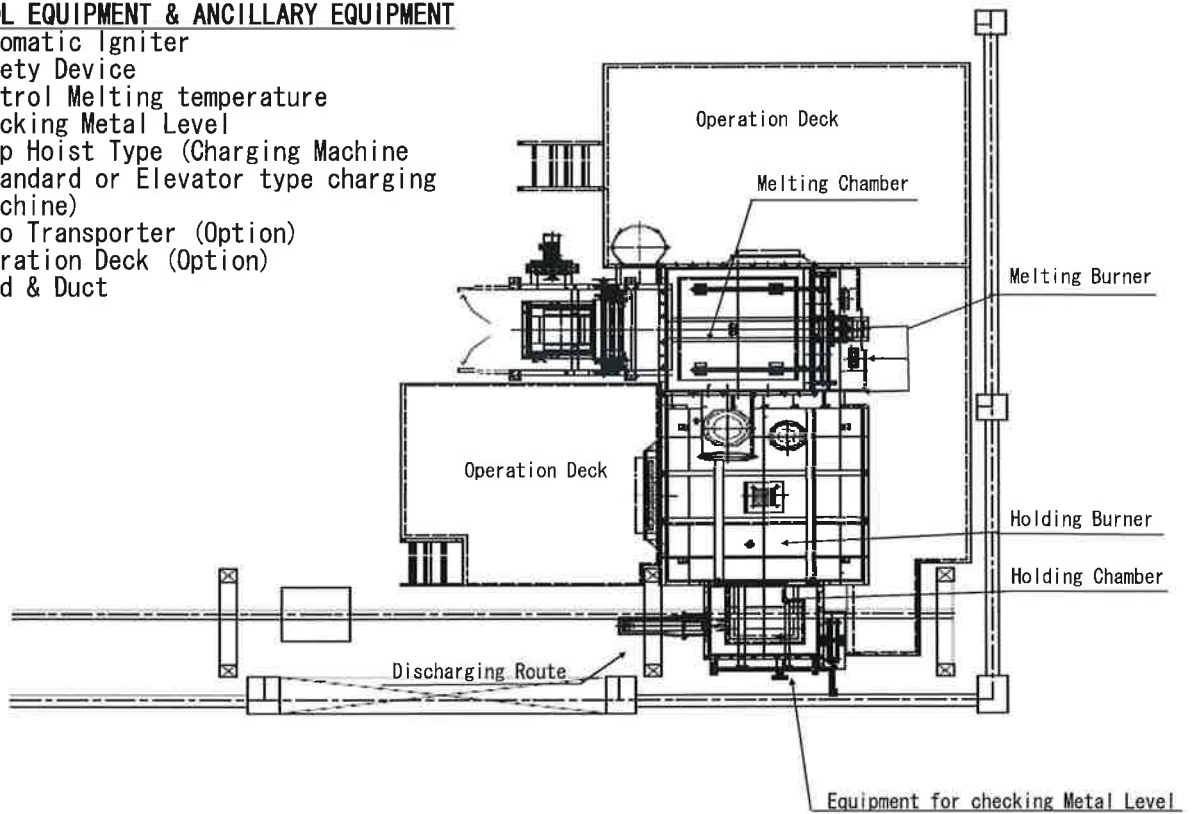
★ We can assemble with Porter (By AK-Sanavo)



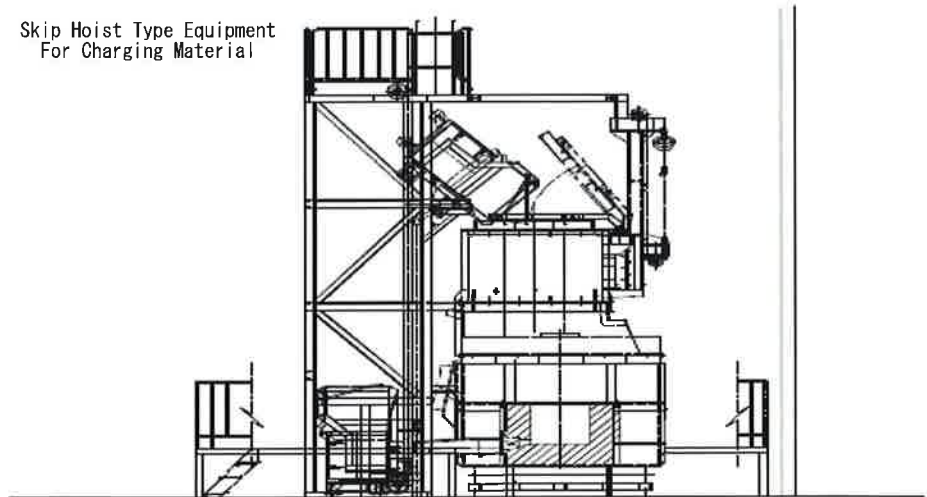
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CONTROL EQUIPMENT & ANCILLARY EQUIPMENT

1. Automatic Igniter
2. Safety Device
3. Control Melting temperature
4. Checking Metal Level
5. Skip Hoist Type (Charging Machine Standard or Elevator type charging machine)
6. Auto Transporter (Option)
7. Operation Deck (Option)
8. Hood & Duct



Skip Hoist Type Equipment
For Charging Material



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ELECTRIC RADIANT –TYPE ALUMINIUM HOLDING FURNACE (EH Model)

The EH furnace is composed of 4 chambers: heating, melt charging, melt distributing and temperature measuring chamber. It is designed to be a holding furnace especially for the aluminium diecasting hot charge process. The furnace consists of highly insulating boards (5 layers) and equipped with molten aluminium level detector, melt and atmospheric temperature control unit. It is designed not only being an energy-saving, labor-saving and space-saving furnace but also a safe fully automatic furnace.

Some of the outstanding characteristics of the EH furnace include :-



1. SUPERIOR ALUMINIUM MELT QUALITY

This furnace is installed with "Silicon Carbide" Electric Heaters which do not generate oxidation and molten metal temperature control below -7 °C to +2 °C of set pointing.

2. LOW ENERGY COST (DURING OPERATION)

Thermal efficiency in electric furnace is very high compared to conventional burner-type furnaces. (almost 1/5)

3. SUPERIOR WORKING ENVIRONMENT

No noise, no exhaust gas and no heat radiation from the furnace body.

4. LOW MAINTENANCE COST

Built to withstand harsh conditions, it is possible for the furnace to be free of repairs for more than 4 years.

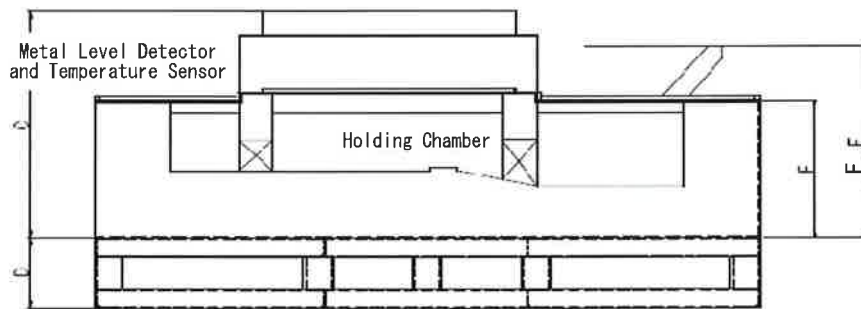
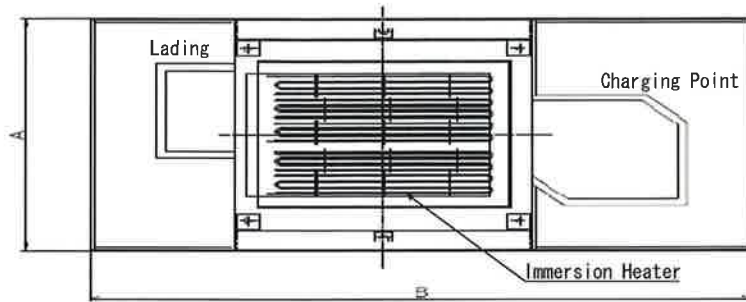
5. "BATH TUB" DESIGN

With a "bath tub", the furnace refractories are cast in one operation without any joints. Since there are no joints during refractory casting, it will be difficult for refractories.

EH Furnace Specification

Type	Holding Capacity (kg)	Electrical Power (KW)	Electric Power on casting (KWH)	Electric Power on holding (KWH)
EH-500	500	9	5	3
EH-700	700	10	7	3.5
EH-1000	1000	12	9	4.5
EH-1200	1200	15	11	5
EH-1500	1500	18	13	6.5
EH-2000	2000	27	18	8.5





EH Series Furnace Dimensions

	EH-500	EH-700	EH-800	EH-1200	EH-2000
A	1,260	1,430	1,460	1,500	1,500
B	1,710	2,155	2,310	2,890	3,130
C	1,230	1,230	1,230	1,450	1,500
D	HEIGHT CAN BE MADE ADJUSTABLE				
E	665	665	665	880	930
F	965	965	965	1,080	1,230

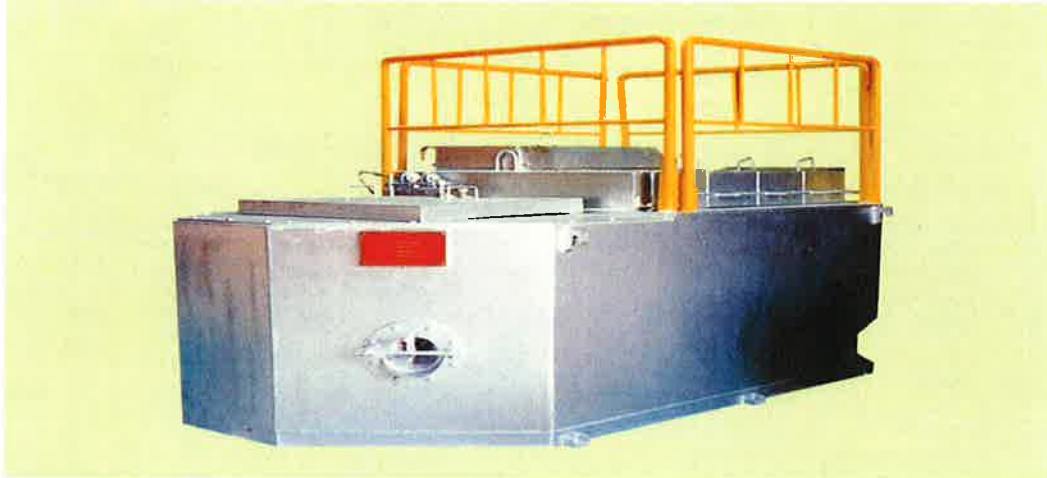


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IMMERSED TYPE ALUMINIUM HOLDING FURNACE (SH Model)

This furnace is developed to eliminate all the weak points of the conventional radiation type electrical heating holding furnace. Because it is made up of a high strength one piece casted refractory bath and highly insulating materials it becomes one of the most energy-saving, space-saving holding furnace.

Some of the outstanding characteristics of the SH furnace include :-



1. EXCELLENT MELT QUALITY

Very little segregation and oxides formation due to the fact that the melt is heated from inside.

2. NO SURFACE SCUM FORMATION

Atmospheric temperature of the heating chamber is + 50 °C higher than the temperature of the melt. therefore the formation of surface scums are prevented.

3. LOW ENERGY COST

Approximately 20% lower electric power consumption compared to radiation type furnaces.

4. LONG LIFE HEATING TUBE

Utilize new fine ceramics tubes that last longer.

5. COMFORTABLE WORKING ENVIRONMENT

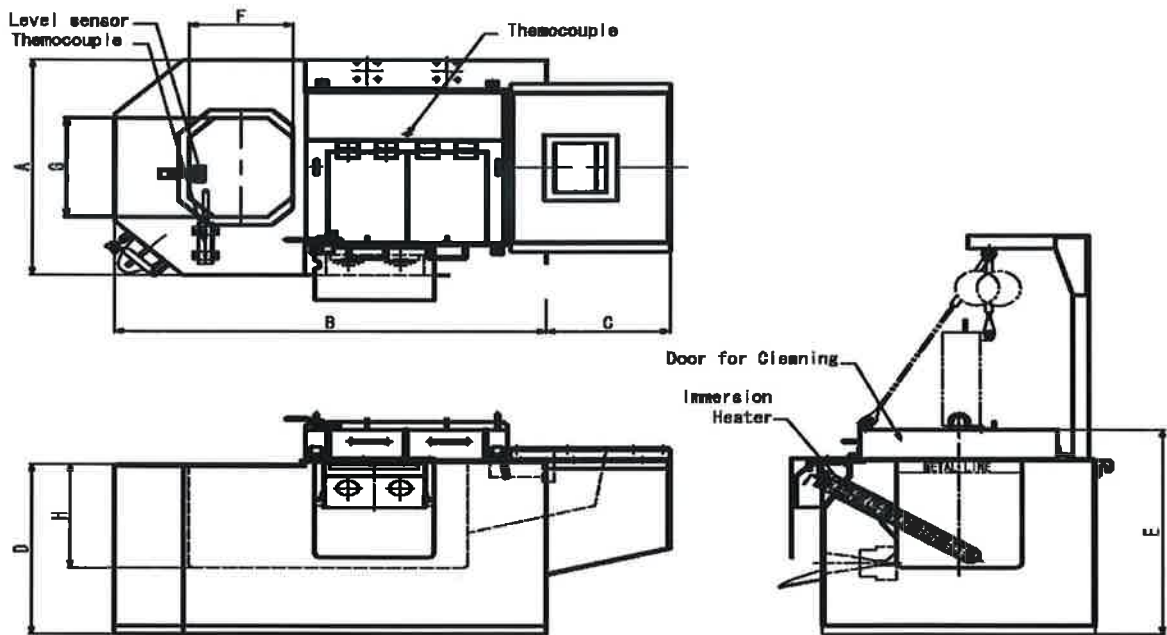
Due to the outer body temperature of the holding chamber is only 20 °C above outside temperature. gross cleaning operation becomes more convenience.

6. SAFETY

The furnace has a short circuit, electric leakage protecting circuit.

SH Furnace Specification

Type	Holding Capacity (kg)	Heater Capacity (KW × No. of Pcs.)	Electric Power On Casting (KWH)	Electric Power On Holding (KWH)
SH-500	500	9 × 2	6	4
SH-700	700	9 × 2	8	5
SH-1000	1000	9 × 2	10	5.8
SH-1200	1200	9 × 2	11	6.4
SH-1500	1500	9 × 3	13	7
SH-2000	2000	9 × 3	17	8.5



* Dimension can be changed to suit customer site condition

SH Series Furnace Dimensions

	SH-500	SH-700	SH-1000	SH-1500	SH-2000
A	1,100	1,200	1,250	1,300	1,500
B	1,700	1,950	2,000	2,450	2,680
C	650	650	650	650	650
D	1,100	1,100	1,100	1,100	1,100
E	1,500	1,500	1,500	1,500	1,500
F	350	500	500	600	700
G	400	450	550	650	800
H	650	650	650	650	650

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RADIATION TYPE ALUMINIUM HOLDING FURNACE (H Model)

This furnace is developed eliminate the weak points of the electrical heating furnace also crucible type furnace. Because this furnace can fluxing treatment and it can quickly come up the metal temperature. This furnace can assembled with central furnace, also "One By One" diecasting machine.

Some of the outstanding characteristics of the H furnace include :-



1. LOW INITIAL COST

The cost of furnace is lower than EH & SH Type

2. CREATE METAL QUALITY

This furnace can fluxing & degassing treatment for molten metal.

3. QUICKLY COME UP METAL TEMPERATURE

This furnace can up the metal temperature more than electrical furnace.

4. LOW RISK WHEN NO POWER

If you have accident of no power, this furnace has lower risk than electrical furnace.

5. CHOICE OF FUELS

The furnace can be designed to run on the following fuels:-

Gas : Town/City gas, Natural gas, Propane, Butane
Oil : Heavy oil crude A , Diesel oil, Kerosene,

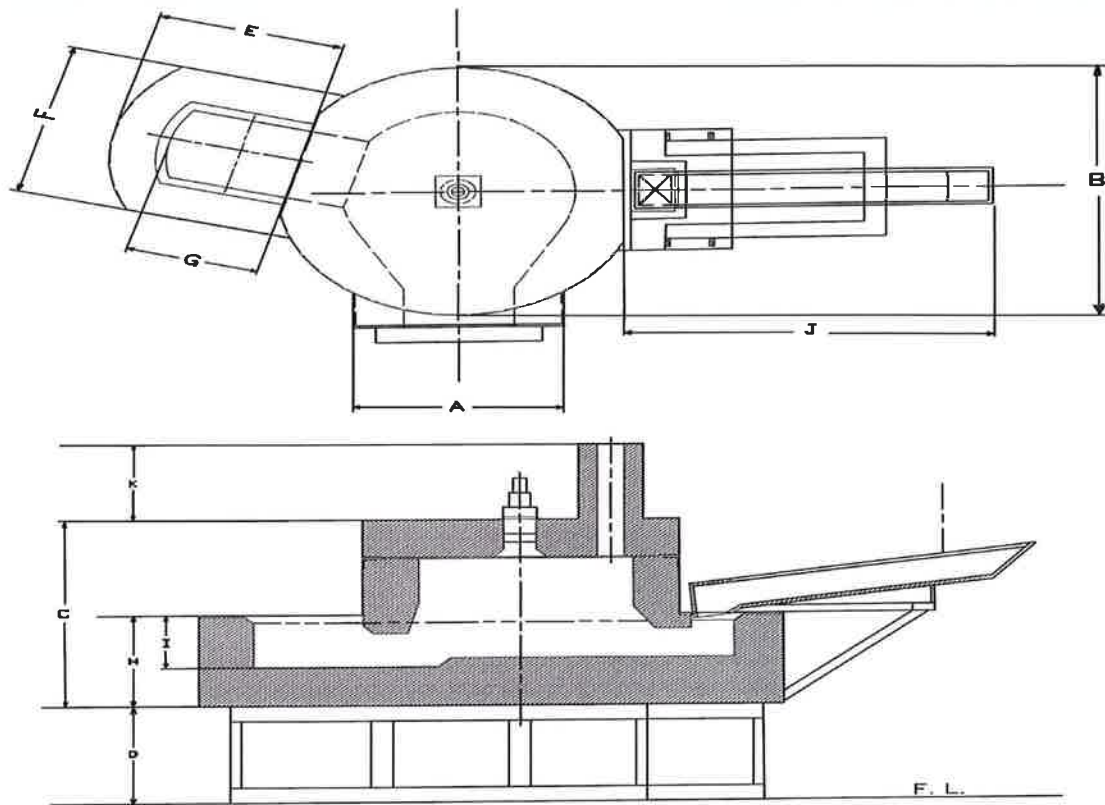
H Furnace Specification

Type	Holding Capacity (kg)	Holding Burner Cap. (Kcal/Hr)
H - 400 (500)	400 (500)	50,000
H - 700 (800)	700 (800)	80,000
H - 1000	1,000	100,000
H - 1200	1,200	120,000
H - 1500	1,500	150,000
H - 2000	2,000	200,000

★ *Sizes larger than H - 2000 are available.*



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H Series Furnace Dimensions

	H-400	H-1000	H-1200	H-1500
A	950	950	950	1,017
B	1,460	1,730	1,780	2,158
C	1,235	1,450	1,500	1,800
D	HEIGHT CAN BE MADE ADJUSTABLE			
E	710	860	910	750
F	920	1,020	1,070	1,000
G	480	607	657	400
H	610	730	780	888
I	350	450	500	496
J	LONG CAN BE MADE ADJUSTABLE			
K	HEIGHT CAN BE MADE ADJUSTABLE			

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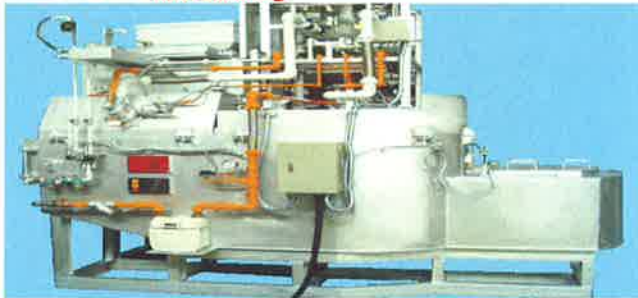
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CONTINUOUS ALUMINIUM MELTING AND HOLDING FURNACE (SER Model)

This melting and holding furnace is designed for continuous operation and is suitable for aluminium die-casting and aluminium industries. Equipped with "Super Low Speed Luminous Flame Burners", it performs better than conventional furnaces by offering temperature uniformity of molten metal coupled with excellent energy savings. Although it is a normal standard furnace that is composed of a melting chamber, a holding chamber and a heating burner, it has several outstanding features :

Some of the outstanding characteristics of the SER furnace include :-



1. SUPERIOR ALUMINIUM MELT QUALITY

Special luminous flame burners carefully selected by DAIKI ensures that hard spot formation and gas absorption problems are minimal. This translates into higher quality melts as molten metal that flows into the holding chamber has very little oxidation.

2. MELTING OF ALUMINIUM ALLOYS

This furnace is capable of melting various types of aluminium alloys.

3. LOW NOISE POLLUTION

Using low speed burners, the furnace operates at a relatively low noise level of about.

4. LOW ENERGY COST

Using luminous flame burners coupled with efficient furnace design, it is possible for fuel consumptions to be lower than 500,000 kcal/metric ton.

5. GOOD TEMPERATURE CONTROL

It is possible to regulate the temperature of the molten metal to within ± 5 degrees celsius.

6. CHOICE OF FUELS

The furnace can be designed to run on the following fuels:-
Gas : Town/City gas, Natural gas, Propane, Butane
Oil : Heavy oil crude A , Diesel oil, Kerosene,

7. LOW MAINTENANCE COST

Constructed in modular units, the cost of maintaining the furnace is low. It is possible for the furnace to be maintenance free for more than 5 years.

8. FAST INSTALLATION AND SHORT START-UP TIME

The furnace only requires about 3 days to install and can start operating in a very short time.

9. EASE OF CLEANING

A lot of thought has been put into the design of the furnace to ensure that there are no dead corners in the furnace chamber. This prevents hard clumps of oxidants from sticking onto the furnace refractories and makes the chore of cleaning very easy.

10. AUTOMATIC SYSTEM (OPTIONAL)

It is possible to automate the furnace even further by installing an optional ancillary equipment to charge ingots, hot returns(runners, gatings), etc into the furnace.

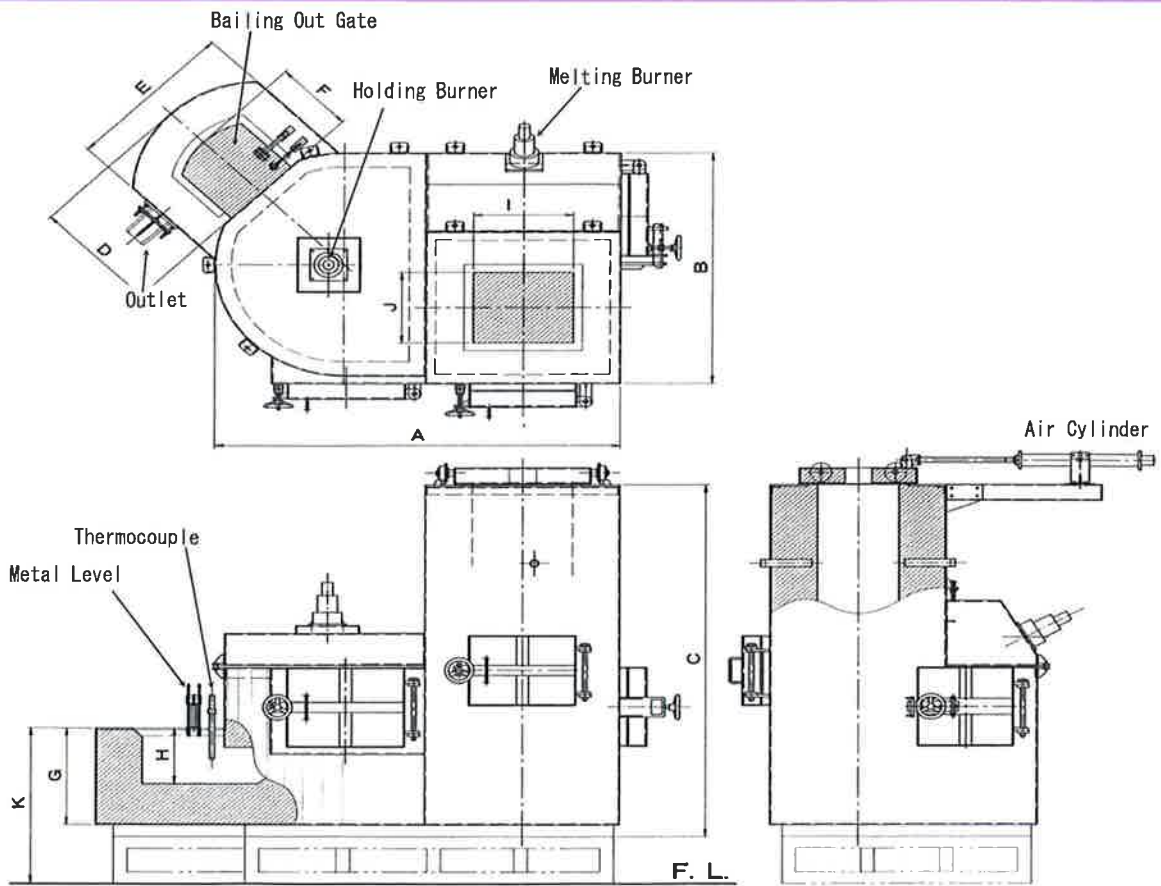
SER Furnace Specification

Type	Melting Rate (Kg/Hr)	Holding Capacity (Kg)	Melt. Burner Cap. (Kcal/Hr)	Hold. Burner Cap. (Kcal/Hr)
SER-100	100	400	80,000	80,000
SER-150	150	500	100,000	80,000
SER-200	200	650	120,000	80,000
SER-300	300	1,000	150,000	120,000

★ *We can assemble with rotary degasser, used in aluminium alloy casting work.*



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* The furnace can be designed to accommodate

SER Series Furnace Dimensions

	SER-100	SER-150	SER-200	SER-300
A	1,818	2,030	2,218	2,630
B	1,218	1,370	1,470	1,630
C	1,800	1,950	2,150	2,100
D	600	650	700	750
E	350	400	450	550
F	350	400	450	500
G	560	610	610	690
H	300	350	350	430
I	350	450	550	600
J	350	400	450	450

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IMMERSED-TYPE CONTINUOUS ALUMINIUM MELTING AND HOLDING FURNACE (SEH Model)

This Melting and Holding Furnace is designed for continuous operation and is suitable for aluminium die-casting and aluminium industries.

Equipped with "Super Low Speed Luminous Flame" in the Melting Chamber and electric heaters in the Chamber, it performs better than conventional furnaces offering good temperature uniformity of molten metal with excellent savings.

Some of the outstanding characteristics of the SEH furnace include :-



1. SUPERIOR ALUMINIUM MELT QUALITY

Special luminous flame burners carefully selected by DAIKI ensures that hard spot formation and gas absorption problems are minimal. This translates into the Holding Chamber has very little oxidation.

2. NO HARD OXIDATION MATERIAL

With excellent furnace design and temperature control, the temperature in the Holding Chamber is kept at about 50 degrees Celsius higher than that of the molten metal. As such, the customer will not experience the nightmare of having to remove hard oxidation material caused by over temperature conditions.

3. LOW ENERGY COST

Compared to furnaces built by other maker, it is to save up to 70% of the energy for equipment of this design.

4. EXCELLENT TEMPERATURE CONTROL

It is possible to regulate the temperature of the molten metal to within ± 3 degrees celsius.

5. LONG HEATER LIFE

The life of the heater is prolonged by using ceramic tubes made of high tech ceramics.

6. LOW MAINTENANCE COST AND SMALL SPACE UTILIZATION

Built for rugged operations, the cost of maintaining the furnace is low. The space required by this furnace is only 70% of that of conventional burner-type design.

7. SUPERB WORKING ENVIRONMENT

The temperature of the furnace vicinity is only about 20 degrees celsius higher than that room temperature. As such, the task of removing dross at close distances to the furnace is pleasant.

8. CHOICE OF FUELS

The furnace can be designed to run on the following fuels:-

Gas : Town/City gas, Natural gas, Propane, Butane
Oil : Heavy oil crude A, Diesel oil, Kerosene,

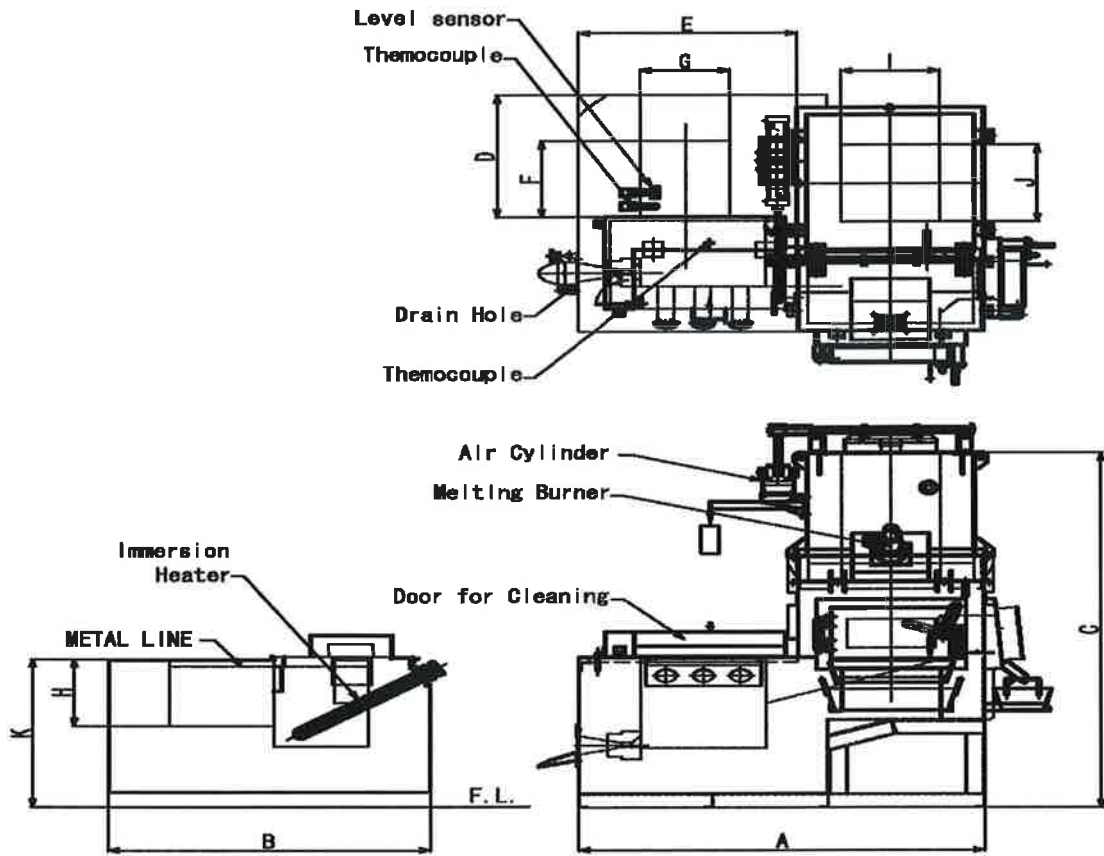
SEH Furnace Specification

Type	Melting Rate (Kg/Hr)	Holding Capacity (Kg)	Melt. Burner Cap. (Kcal/Hr)	Heater Cap. (kw x No. of Pcs)
SEH-100	100	450	80,000	9 x 2
SEH-150	150	500	100,000	9 x 2
SEH-200	200	650	120,000	9 x 3
SEH-300	300	700	150,000	9 x 3

★ *We can assemble with rotary degasser, used in aluminium alloy casting work.*



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SEH Series Furnace Dimensions

	SEH-100	SEH-150	SEH-200	SEH-300
A	1,560	1,780	1,930	2,200
B	1,310	1,400	1,550	1,660
C	2,250	2,400	2,600	2,800
D	400	400	400	400
E	400	450	450	500
F	400	450	450	500
G	930	1,000	1,100	1,100
H	400	400	450	500
I	500	500	500	610
J	480	480	470	500

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