SGR-1000

Specifications

Dimensions	H270mm×W230mm×D80mm
Option	Printer, QCPH
CPU	DOS/V Personal Computer
Monitor	TFT7.5"
Temperature	JIS-K
Converter	Measurement range(0-1370℃)
Keyboard	Designed keyboard (built in the body)
Cup stand	One set
Weight	3.0kg

SGR-2000

Specifications

Dimensions	H350mm×W310mm×D80mm
Option	Printer, QCPH
CPU	DOS/V Personal Computer
Monitor	TFT14"
Temperature	JIS-K
Converter	Measurement range(0-1370℃)
Keyboard	Designed keyboard (built in the body)
Cup stand	One set
Weight	5.5kg

Produced and Sold by

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Nodularity ratio determined in 3 minutes after spheroidizing treatment

SGR-1000 (SGR-2000)

Data storing

Light weight

3.0kg (SGR-1000)

5.5kg (SGR-2000)

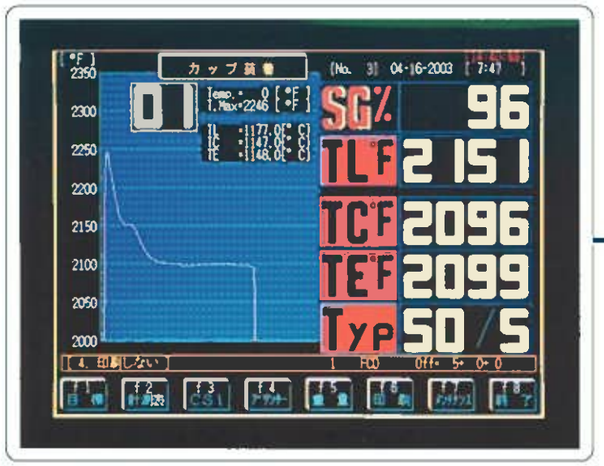
Thin body

H270mm×W230mm×D80mm (SGR-1000)

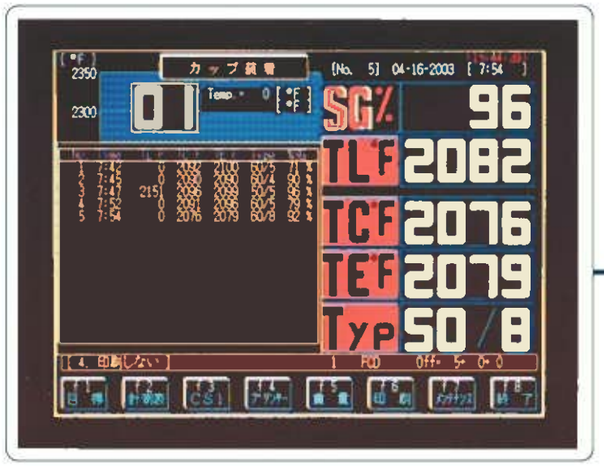
H350mm×W310mm×D80mm (SGR-2000)

NAKAYAMA CO.,LTD.

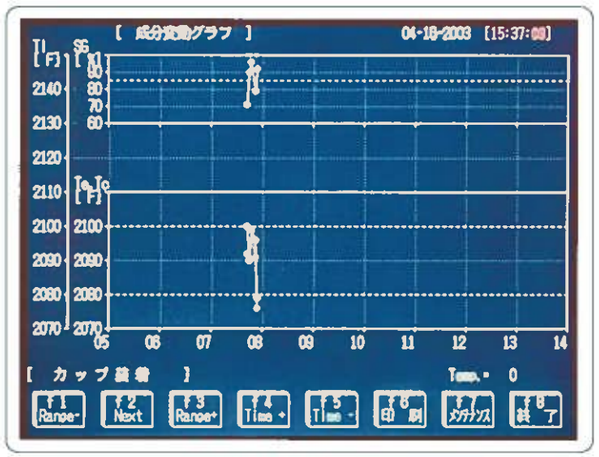
Nodularity measurement for cast iron SGR-1000 and SGR-2000



By switching on the device, measurement is started and a cooling curve is drawn on the screen.
After drawing the primary crystallization temperature and the eutectic temperature, the nodularity ratio is calculated and displayed.



Variation of nodularity ratio is displayed on a table and a graph.



Objective of development

In order to evaluate nodularity ratio of a spheroidal graphite cast iron melt before pouring, a computerized automatic thermal analysis method was developed, which is quick, simple, and high in precision.

The process of development of the new thermal analysis system

Step	Objective	Content
1	**Regression analysis**	A multi-regression equation was obtained to give nodularity as a function of several singular points on a cooling curve.
2	**First improvement for higher accuracy**	Classification of cooling curves into several types. Multi-regression equation for each type.
3	**Second improvement for higher accuracy**	Multi-regression equation of nodularity as a function of the melt composition and the cooling curve.
4	**Accuracy checking**	Test application of the regression equation to a production line.
5	**Device development**	Development of an automatic device for thermal analysis data acquisition and regression analysis.

Conventional method → **SGR-1000 SGR-2000**

Shortcomings

1 Need of a specialist of microanalysis.
2 Analysis time as long as 10 minutes.
3 Individual bias in measurement.

Development of a new method

Improvements

1 Automatic measurement.
2 Analysis time as short as 3 minutes.
3 No Individual bias.