LABORATORY EQUIPMENT

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ISO 9001 Certification
(Quality Management Systems)

ISO 14001 Certification
(Environmental Management Systems)

SATAKE CORPORATION has obtained ISO9001 and ISO14001 certification. These international standards for management systems ensure Satake will continue to provide high quality products and services.

No. 944-12

Creating the Future
SATAKE

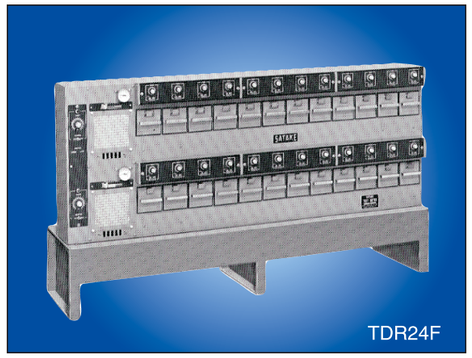
LABORATORY EQUIPMENT

SATAKE CORPORATION

1. Testing Dryer

It is designed for drying samples of grain. Up to 48 separate samples of grain can be simultaneously dried by means of hot air. The power supply is regulated by safety devices to prevent excessive temperature rise.

Model		TDR24F	TDR48F
Drying Speed		1.0~1.2% per hr.(At sample quantity 600~700g) for paddy 1.5~2.0% per hr.(At sample quantity 600~700g) for wheat	
Air Temperature		35~45℃ for paddy, 50~55℃ for wheat	
Heater	Type	Semiconductor Heater	
	Power	0.6~1.8kW×2	0.3~1.8kW×4
Suction Fan	Type	Mini-Plate Fan	
	Power	120 (60x2) W	240 (60x4) W
Sample Container (Box)		600~700g x 24pcs.	600~700g x 48pcs.
Power Source		Single Phase 200V	
Dimensions(L×W×H)		1,950 x 554 x 1,083mm	1,950 x 554 x 1,583mm
Net Weight(kg)		140	260


TDR24F


TDR48F

2. Testing Husker

1. The Testing Husker can be successfully used for easy husking of paddy, either in the laboratory or in the rice mill. The husked rice, the husks and the immature paddy are automatically separated by an aspirator.

Model	THU35C-T
Capacity on paddy	50kg/hr
Power Source	Single Phase, 220~240V,400W
Outside Dimensions	L748×W369×H814mm
Size of Rubber roll	Width 35×Dia.100mm
Net Weight	59kg
Accessories	Rubber Rolls × 2 Nylon Brush × 1


THU35C-T

2. About 10g of paddy sample can be husked by two rubber rolls, which can be rotated by hand at different speeds.

Model	TR120
Outside Dimensions	L70×W49×H80mm
Rubber roller	27mm in dia., hardness 85
Net Weight	220g
Sample Weight	10g


TR120

3. Husked kernel can be obtained by twisting after putting a small quantity of paddy on a rubber plate which is covered with another rubber plate.

Model	KY-114
Outside Dimensions	Dia.100×40mm
Husking Surface	Dia.80mm
Net Weight	250g


KY-114

3. Testing Mill

The Testing Mill is excellent for rapidly whitening a sample of husked rice or barley. It is solidly constructed from high-grade cast iron and steel. Again, installation is also very easy.

Model	TM05C(2)-T
Input Capacity	200g/One time
Power Source	Single phase, 220-240V*, 400W
Roll Speed	750-1450rpm
Outside Dimensions	L368.5×W587×H388mm
Net Weight	43.2kg
Accessories	Spanner × 1 Cleaning Brush × 1 #30× 1 each

* Use a transformer (1.2kVA) to transform voltage when connecting to power supplies which are not 220-240V.


TM05C(2)-T

4. Tesing Width and Length Grader

The Testing Width and Length Grader performs a double function in one body. This model can grade either broken and immature grains or broken and shorter grains from whole grains just by changing the internal cylinder.

Model	TWL05C(3)-T
Capacity	600g / batch (for thickness grading)
	100g / batch (for length grading)
Power Source	Single phase, 220V, 50Hz, 40W
Dimensions	L741×W455xH420mm
Net Weight	45kg
Available Cylinder Size	〈Slotted Cylinder (for thickness grading)〉 1.20, 1.40, 1.60, 1.65, 1.70, 1.75, 1.80, 1.85, 1.90, 2.00, 2.10, 2.20, 2.30 〈Indented Cylinder (for length grading)〉 S3.2, S3.6, S4.0, S4.2, S4.75, S5.2, S5.7, S6.2, S7.0

TWL05C(3)-T

1. Sample Divider

The divider is used for reducing the size of a parcel of grain, whilst simultaneously providing a representative sample of the original parcel. It can also be used for mixing.

Model	TS-L	TS-S
Hopper Capacity	3kg	1kg
Partition	36 Holes	32 Holes
Height	1,000 mm	580mm
Diameter	360 mm	240mm
Net Weight	7.5kg	3kg


TS-L

2. Sample Bag

It is made of transparent polyethylene film for quick comparison as well as displaying the samples. Two different sizes are available.

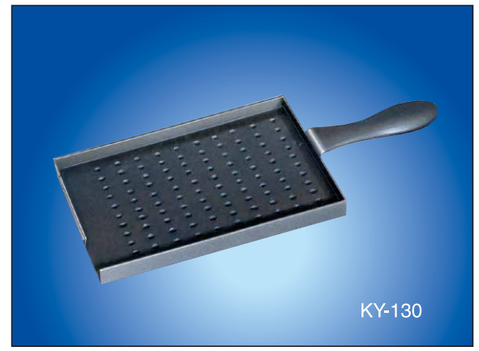
1. Single bag type:
   Overall size: W110×L180mm with resealable top.

2. Multiple bag type:
   6 compartments with resealable top.
   Compartment size: W70×L105mm
   Overall size: W442×L105mm

3. Grain Counter

The grain counter is used to pick up precisely 100 grains for analysis purposes. The unit is made of urea resin.

Model	KY-130


KY-130

1. Moisture Testing Kit for Official Measuring

For official tests of moisture content of paddy in Japan, the Ministry of Agriculture, Forestry and Fisheries employ a method using 105℃ for 5 hours. In some other countries 130℃ for 1 hour is employed as an official test. However, some scientists claim that 135℃ for 3 hours gives the most reliable results. Whilst the official standard method in each country, temperature as well as heating time, may be varied according to their own conditions and characteristics, the basic principles of the test method remain the same.

1. Grind the grain sample with the grinder and accurately place 5g of the material into the aluminium container.
2. Turn on the heating element of the rotary dry oven and raise the temperature inside the oven until it is slightly above the target level.
3. Place the container into the rotary oven. About 18 containers can be put in the oven at a time.
4. The temperature inside the oven will fall when the door is opened, but it soon regains the temperature level after reclosing the door.
5. After reaching the predetermined target temperature level, switch on the thermostat and begin timing. The oven will maintain an even temperature and all samples will be subjected to uniformly high heating.
6. Open the door after the predetermined time has elapsed. Remove the sample containers and place them into the airtight glass desiccators for cooling before weighing.
7. Weigh the sample after cooling and calculate the weight loss for determining the moisture content of the material.


TQ-100


TS-400


TS-50

Grinder

Model		TQ-100
Roll (Mesh of Crushed Sample)		#20～#30
Outside Dimensions		L70×W80×H180mm
Net Weight		1.2kg

Rotary Dry Oven

Model		TS-400
Maximum Temperature		150℃±1℃
Electric Source		4A
Dimensions	Outside	L410×W380×H530mm
	Inside Room	L320×W310×H210mm
	Rotating Shelf	Dia.290 for 18 containers
Net Weight		20kg
Accessories	Thermometer & Case	1pc.
	Aluminum Container	20pcs

Desiccator

Model		TS-50
Dimensions	Diameter of Inside Shelf	150mm
	Outer Diameter ×Height	250×250mm

2. Handy Moisture Meter

1. Newly designed automatic temperature calibration device eliminates troublesome correction works for both ambient and grain temperature. Microcomputer shows the average value of measurement in digital display.

Model		SS-8
Measuring Range	Paddy	8.7～40.0%
	Brown Rice	9.1～40.0%
	Polished Rice	9.8～20.0%
	Barley	8.0～34.3%
	Wheat	8.6～35.0%
	Naked Barley	8.4～34.7%
Accuracy		±0.5%(within10%～20%moisturerange)
Power Source		Dry AA Battery1.5V×4pcs
Dimensions		W175×H72×D100mm
Net Weight		480g

SS-8

2. Moisture content is digitally displayed after filling the cup with sample grains (20-180g depending on products).

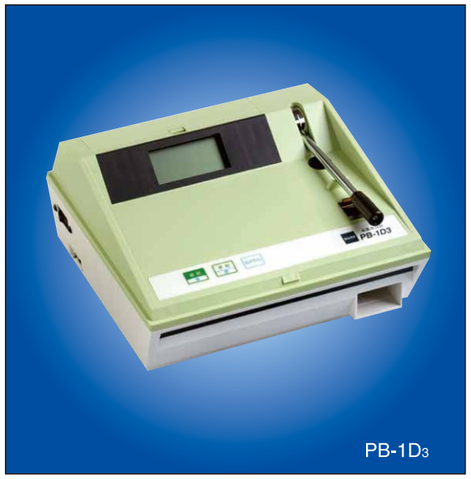
Model	PM-450
Measuring Method	Dielectric Constant
Applications	Agricultural Products
Measuring Range	Moisture -1- 40% / Product Dependent
Accuracy	± 0.5% (under 20%)
Power Source	4pcs×"AA "size
Dimensions	L125×W215×H205mm
Net Weight	1.3kg

PM-450

3. Standard Moisture Meter

This resistive moisture meter has been designed to apply the well proven principle that resistance varies in proportion to the moisture content of rice and wheat.

Model		PB-1D3
Measuring Range	Paddy	11～35%
	Rice-Rye	11～20%
	Barley-Wheat	10～40%
Accuracy		±0.5% (against 105℃ method)
Power Source		To be specified within the range of AC100(50/60Hz) or 4 pcs×1.5V batteries
Overall Dimensions		L240×W250×H125mm
Net Weight		1.3kg


PB-1D3

4. Infrared Moisture Meter

It comprises a balance and an infrared lamp. The Moisture Content can be read directly from the scale. The sample to be measured is placed on the pan of the balance and dried rapidly by the infrared lamp. The balance remains in the level position, while the indicator moves, due to the moisture evaporation. The position of the rider acts as a moisture indicator and enables the moisture content to be read.

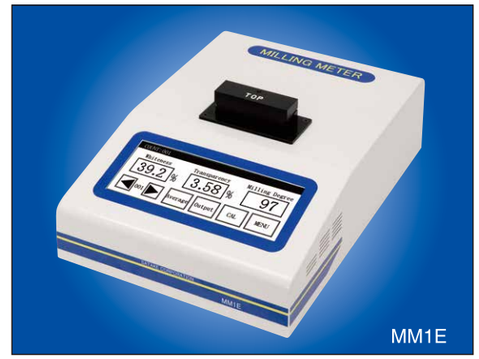
Model	FD-660
Sample Weight	1~80g (Optional weight)
Measuring Range	0~100% (Wet base), 0~500% (Dry base)
Reproducibility	5g or over ±0.1%
Sample Dish	110mm dia., 11mm depth (stainless)
Power Source	280W x 2 Organic carbon heater AC100~120V / AC220~240V (50/60Hz)
Outside Dimensions	W222 x H196 x D360mm
Net Weight	3.2kg
Accessories	Sample dish x 2, aluminum sheets, etc.


FD-660

1. Milling Meter

Whiteness, transparency and milling degree are displayed in digital form by measuring the amount of reflected and transmitted light from the sample grain. It is more accurate than the conventional type of whiteness meter.

Model		MM1E
Measurement Method		Photo diode
Measuring Range	Whiteness	5.0~70.0%
	Transparency	0.01~8.00%
	Milling Degree Point	0~199
Power Source		Single Phase AC90~240V , 50/60Hz
Light Source		Blue LED
Dimentions		L305×W210×H86mm
Net Weight		3.5kg



MM1E

2. Grain Crack Inspector

1. The Grain Scanner 2 analyzes the color and shape information of individual grains in short time.

Model	RSQI10B
Imaging Method	Light Source : LED, Sensor : CCD
Measuring Speed	1000 grains / 60 seconds(Rice)
Outside Dimension	L270 x W480 x H110 mm
Net Weight	4.6 kg


RSQI10B

2. It inspects and measures the quality of the appearance of each rice grain. A statistical analysis of results is given on the inbuilt display.

Model		RGQI 100B
Measuring Method		High-speed image processing + Latest distinction algorithm
Measuring Mode	No. of grains/sample	User configurable from 1 to 2,000
	Speed of Analysis	1,000 grains / 35 seconds approx.
Power Source		AC adapter : AC100V-240V ±10% 50/60Hz(AC adapter system)
Dimensions		L182×W267×H130mm
Net Weight		2.3kg

* Objective : short grain only (in general)


RGQI 100B

3. Put the sample on the sample pan and check characteristics of grains easily. Not limited to rice alone, other grains may also be inspected.

Model	RGVC10A
Dimensions	Storage case : D240×W290×H100mm
	Transparent device : D237×W220×H55mm
Net Weight	1.25kg


RGVC10A

4.It is used for inspecting rice quality. Extent and the percentage of damaged grain present in the sample can be quickly determined by placing the grain on the plate.

Model	TX-200
Outside Dimensions	L134×W162×H80mm
Net Weight	0.5kg


TX-200

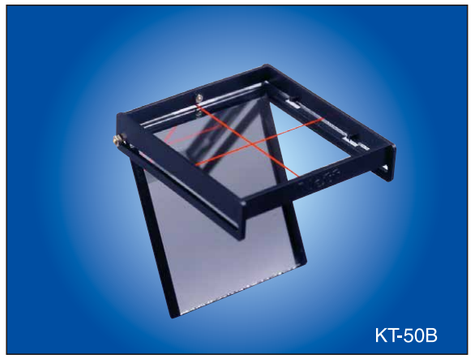
5.50 short grains can be inspected by adjusting the light from the mirror. Percentage of cracked grain can be determined simply and quickly.

Model	KT-50A
Outside Dimensions	L78×W100×H25mm
Net Weight	170g


KT-50A

6.Put the rice grains on the glass and examine them by moving the mirror. Can be used instead of sample pan.

Model	KT-50B
Outside Dimensions	L90×W80×H19mm
Net Weight	115g


KT-50B

3. Magnifier

1.A magnifier with a circular fluorescent tube which completely surrounds the magnifier.

Model		FS-300
Power		3X
Fluorescent Lamp		20W
Dimensions	Outer Dia.	230mm
	Height	375mm
	Lens Dia.	130mm


FS-300

Model		ES-30
Power		7X
Measuring Range	Length	0~20mm
	Angle	0~90°
	Dimensions	Dia.36×H58mm


ES-30

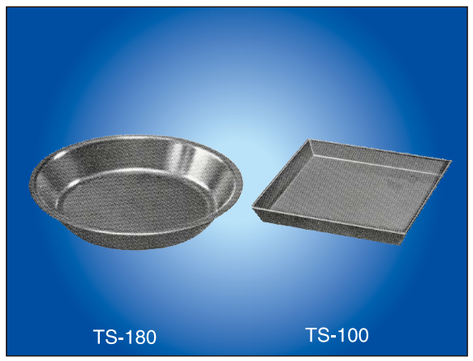
4. Sample Pan

1.All black color and made from synthetic resin.

Model	TS-180
Diameter	180mm

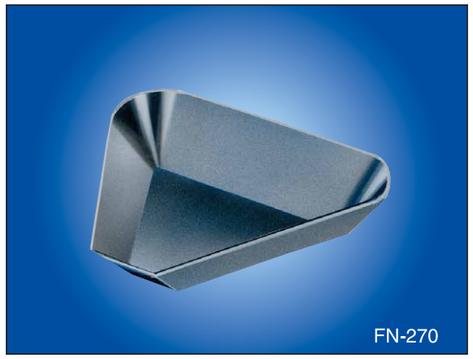
Model	TS-100
Upper edge	100×100mm

*White colored is available.


TS-180 TS-100

2.Made of sheet steel.

Model	FN-270
Base dimension	270mm


FN-270

5. Grain Shape Tester

Place a small quantity of sample on the plate and operate the lever by left hand. Holding a pencil or pincette by right hand and measure the grain length or thickness by moving each grain to the groove.

Model	RT-10	RT-20
Measuring Range	0~10mm	0~20mm
Graduation	Min. 0.01mm	Min. 0.01mm
Dimensions	L120×W85×H35mm	L135×W115×H45mm
Net Weight	150g	280g

MK-100

6. Rigidity Tester

Grain rigidity has a close relationship with quality. Grain with high moisture content or chalky grain shows less rigidity. As a consequence, milling recovery would be less.

Model	KY-140
Maximum Pressure	20kg
Graduation	200g
Pressed Surface	5mm
Dimensions	L290×W180×H330mm
Net Weight	5.2kg

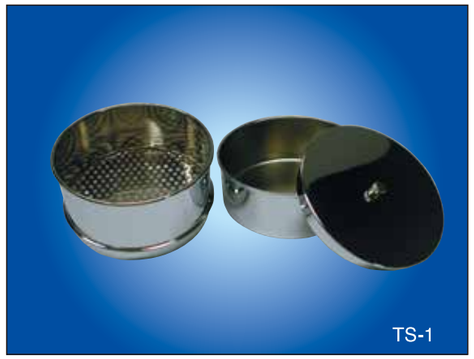

KY-140

7. Sieve

For accurate sifting of a sample for making purity tests.

Model	TS-1
Standard Set (round mesh size)	3.6,4.2,4.9,5.5,7.3,7.9mm
Dimensions	Dia.170×H40mm
Accessories	A Bottom Pan

Note: If other meshes are required, please specify in your inquiry.


TS-1

Model	TS-2
Standard Set (slot mesh size)	1.6,1.7,1.8,1.9,2.0,2.2, 2.4,2.6mm
Dimensions	Dia.120×H50mm
Accessories	A Lid, A Bottom Pan

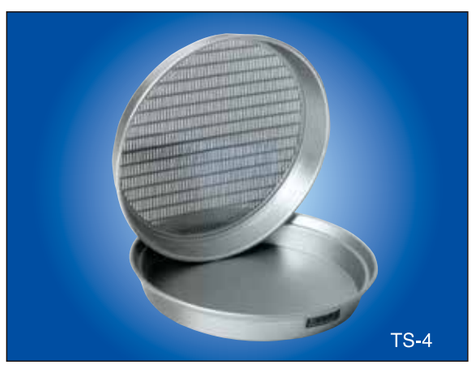
Note: If other meshes are required, please specify in your inquiry.


TS-2

Model	TS-3
Available Round Mesh Size	4.2,4.9,5.5,6.1,6.7,7.3, 7.6,7.9,8.5,9.1mm
Dimensions	Dia.340×H50mm

Model	TS-4
Available Slot Mesh Size	1.6,1.7,1.75,1.8,1.9,2.0,2.1,2.2, 2.3,2.4,2.5,2.6,2.7,2.8,2.9,3.0mm
Dimensions	Dia.340×H50mm

Note: If other meshes are required, please specify in your inquiry.

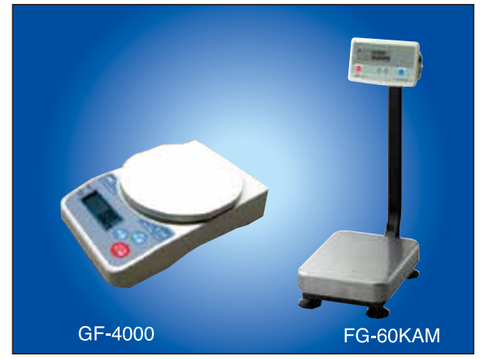

TS-4

1. Electronic Balance

Suitable for weighing all seed and grain samples for testing. Operated by electronic technology.

Model	Capacity	Graduation	Power Source
EW-12Ki	12,000g	1g	AC Adapter or Ni-MH Battery Pack (option)
GF-4000	4100g	0.01g	Approx. 11VA (Supplied by AC Adapter)
FG-60KAM	60kg	0.02kg	AC Adapter or C Size (R14P / LR14)×4 Batteries


EW-12Ki


GF-4000

FG-60KAM

1. Freshness Measurement Analyzer

The Freshness Measurement Analyzer estimates freshness of rice. By measuring the changing color of a reagent with a sensor, the Freshness Measurement Analyzer displays the freshness of a rice sample by numerical value. Since it is easy to use, the Freshness Measurement Analyzer improves the efficiency and reduces the time of operation.

Model	RFDM1B
Measuring Object	Brown rice, polished rice, rinse-free rice
Freshness Degree	10-100
Maximum Quantity of Processing Speed	8 samples / 10 munities
Power Source	AC 100~240 V, 50/60Hz
Light Source	Halogen lamp
Light Source Operation Time	5,000 h
Dimensions	L370×W352×H220mm
Net Weight	8kg

RFDM1B

2. Hardness and Stickiness Analyzer

The characteristics of cooked rice are shown by means of a numerical value. Suitable to the evaluation of a variety of materials, highlighting the differences between processing conditions and product changes with time after cooking.

Model	RHS1A*
Measuring Method	Compress cooked rice and measure the load
Applicable Sample	Cooked rice and processed rice
Evaluation Item	Hardness, stickiness, balance, elasticity
Power Source	AC adapter : AC100V
Dimensions	W200×L343×H310mm
Net Weight	12kg

* Objective : short grain only (in general)

RHS1A

3. Rice Taste Analyzer

The Rice taste analyzer analyzes main ingredients accurately by near-infrared method.
The taste of rice can be measured quickly without the need for cooking.

Model	RLTA10C*
Measuring Method	Near-infrared transmission continuous wavelength method
Applicable Sample	Short grain - Brown rice, white rice, undried brown rice (option)
Evaluation Item	Brown rice: taste, protein, moisture, amylose, fatty acid value
	White rice: taste, protein, moisture and amylose value
	Undried brown rice: protein and moisture value
Speed of Analysis	About 40 seconds
Power Source	AC100V, 50/60Hz, 100W
Net Weight	12kg

* Objective : short grain only (in general)
Values are set based on data of tastes and textures suiting to Japanese.

RLTA10C

4. Cooked Rice Taste Analyzer

Evaluates the quality and taste of cooked rice.
The evaluation results are accurately and objectively compared to human sensory test panel inspectors.

Model	STA1B*
Measuring Method	Visible near infrared reflection and transmission method
Speed of Analysis	1 minute/1 time
Power Source	AC100V/50W 50/60Hz
Standard Equipment	Handy scale and Hand press
Dimensions	W220×L300×H335mm
Weight	9.5kg

* Objective : short grain only (in general)
Values are set based on data of tastes and textures suiting to Japanese.

STA1B