Digital Scale

SK-1000
SK-2000
SK-5000
SK-10K
SK-20K
SK-30K

INSTRUCTION MANUAL
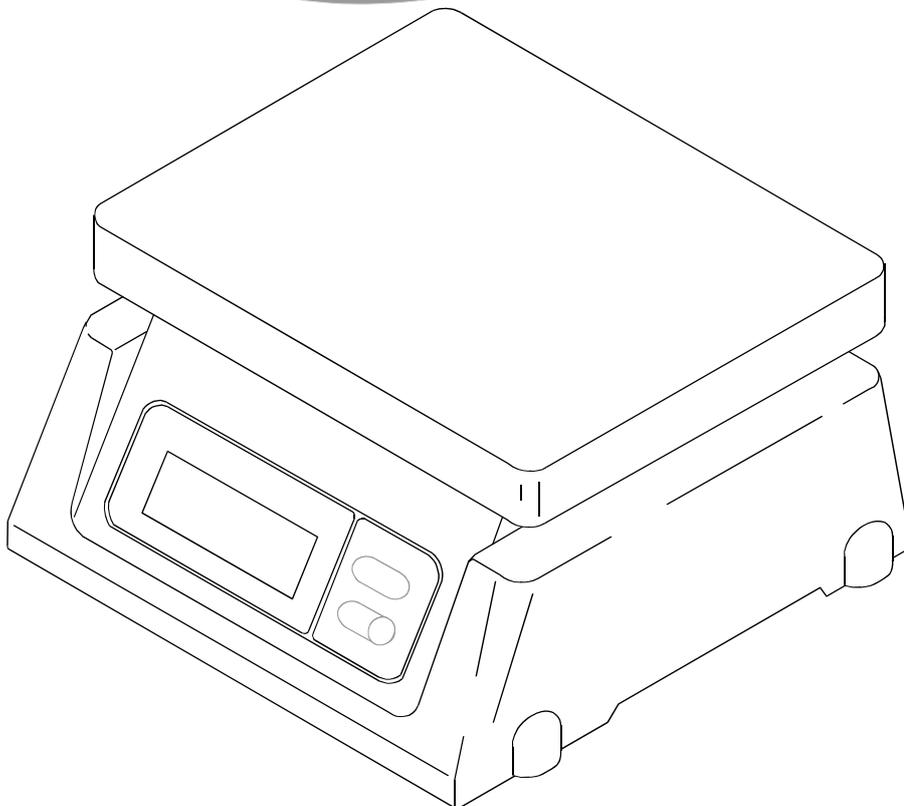
A&D

⬇ SAFETY PRECAUTIONS

All safety messages are identified by the following the words "**WARNING**" and "*CAUTION*". These words mean the following.

⚠ **WARNING**	**Important information to alert you to a situation that might cause serious injury and damage to your property if instructions are not followed.**
⚠ *CAUTION*	Important information that tells how to prevent damage to equipment.

When using the SK, the following safety precautions should always be followed.

⚠ WARNING

Use only the AC adapter which comes with the scale. Other adapter may cause damage. (AC adapter is optional.)

Internal service or adjustment to this product should be performed by a qualified person.

⚠ CAUTION

Avoid installing the scale in direct sunlight, that may cause discoloration or malfunctions.

Do not mix the type of batteries. Replace all other batteries at the same time.

If the scale is not to be used for a long period of time, remove all batteries from the battery compartment to avoid leakage which may cause damage to the instrument.

Avoid overloading that could cause damage to the scale.

Avoid using the weighing pan to move the scale, as that could cause damage to the scale.

⬇ PARTS DESCRIPTION

▶REAR

Sprit level

▶TOP

Weighing platform

▶FRONT

Display

ON/OFF key
Turns the scale
power on/off.

UNITS key
(only for (k)g-lb version)
Changes weighing units,
(k)g or lb.

RE-ZERO key
Sets display to zero or
subtracts weight of a container.

FRONT

▶BOTTOM

AC adaptor socket

Batteries.
*Batteries are not included
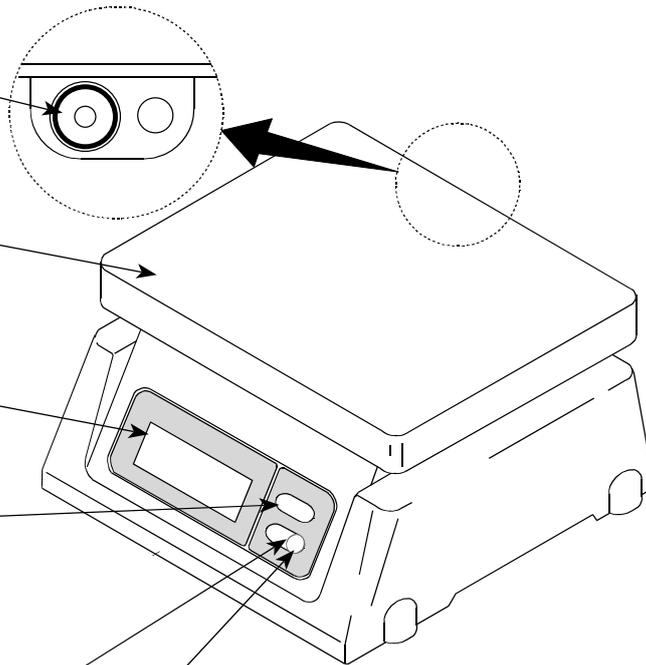
Battery compartment cover

▶DISPLAY

STABLE indicator
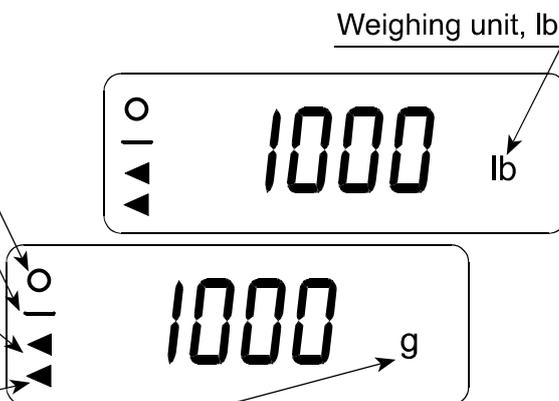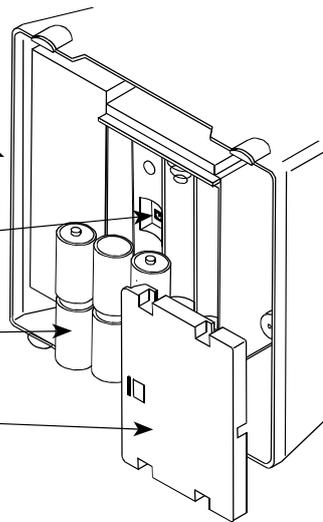Indicates when the reading
is stable.

Polarity

NET indicator
Indicates when NET weight
is displayed.
(Tare function is used.)

ZERO indicator
Indicates when the scale
zero is correct.

Weighing unit, g

Weighing unit, lb

1000 lb

1000 g

1. Installing batteries / Connecting the AC adapters

Batteries

⚠ *CAUTION*

When replacing batteries, be careful not to apply too much force to the weighing pan. An excessive force could damage the scale.

R20P/LR20/"D" size dry batteries.
*Batteries are not included

Battery compartment cover
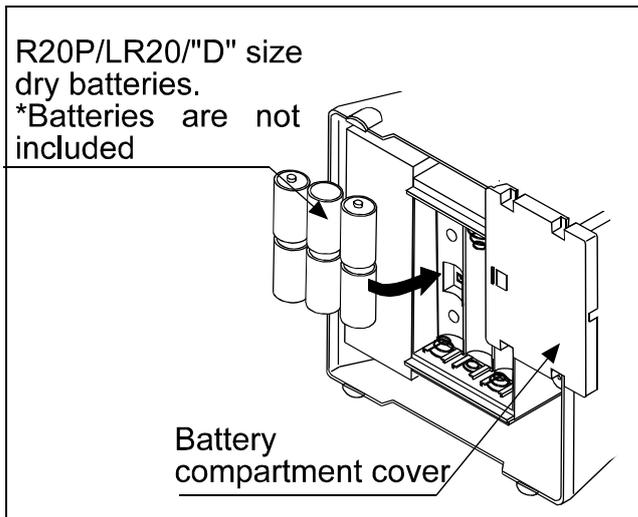
Remove the battery compartment cover and insert six batteries (R20P/LR20/D size) into the battery compartment, taking extreme care that the polarities plus and minus are observed.

AC adapter (optional)

AC adaptor (optional)

Battery compartment
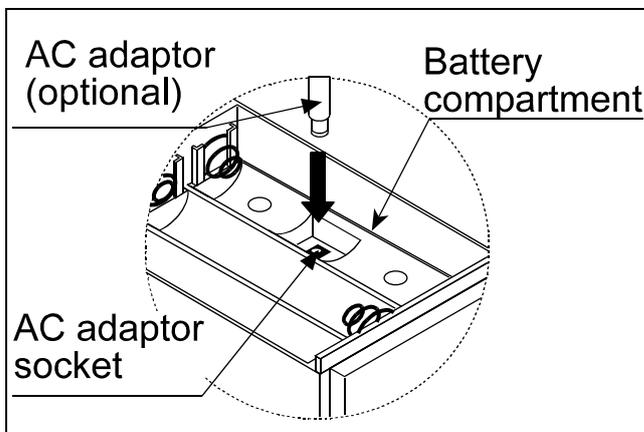
AC adaptor socket

Plug the AC adapter to the AC adapter socket inside the battery compartment.
The AC input requirement could be 100, 120, 220, 230, or 240Volts (50/60Hz) depending on the area where used, so please verify that the adapter is correct.

2. Setting up the SK

⚠ *CAUTION*

Avoid installing the scale in direct sunlight, that may cause discoloration or malfunctions. Place your SK on a firm weighing table so that the scale is level. (The scale will not perform accurately when it is not level.)

Place the SK on the firm surface so that the sprit level shows that the scale is leve for an accurate weighing.

⬇ WEIGHING

Before weighing

Automatic Power-Off Function.

If the scale is left ON and the stable indicator is displayed, the automatic power-off function turns the power off after approximately five minutes (factory setting). To disable or enable the function, press the [ON/OFF] key while pressing the [RE-ZERO] key. The scale stores this setting. To verify this, press both the [RE-ZERO] and [UNITS] keys while in the weighing mode. (See "CALIBRATION" about the [UNITS] key.)

| $PoFF0$ | Function disabled | | $PoFF1$ | Function enabled |

Error Messages

E	Overload
$-----$	The scale zero is out of range
Lb	Low battery

Calibration May be Required Before Weighing.

Read "CALIBRATION" first and if necessary, calibrate your scale for accurate weighing.

Weighing procedures

1. Turn on the scale.

Press the [ON/OFF] key to turn on the scale. Then the scale displays all segments for a few seconds and then 0 will be displayed.

2. Start weighing

If you do not use a container for weighing,
Press the [RE-ZERO] key to display 0 . Verify the reading is 0 . Place objects on the weighing platform to weigh. When the reading becomes stable, the stable indicator ⬤ is displayed.

If you use a container for weighing,
Place an empty container on the platform.
Wait for the stable indicator ⬤ to be displayed and press the [RE-ZERO] key. Place the objects to be weighed in the container.
When the reading becomes stable, the stable indicator ⬤ is displayed.

Select the weighing unit, --- Only for the "(k)g-lb" model---
If you use the (k)g-lb model, press the [UNITS] key to select weighing with either (k)g or lb as the unit.
Normally scales power up in lb when shipped from the factory. To power up in (k)g, turn the scale off. Press and hold the [UNITS] key, then press the [ON/OFF] key. The scale will start with (k)g. To return to the original setting, repeat this instruction.
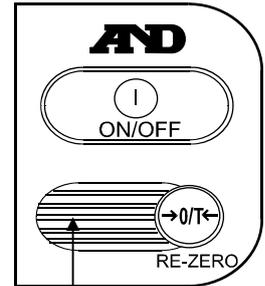
⬇ CALIBRATION

When to Calibrate

Calibration may be required when the scale is initially installed, if it is moved a substantial distance, or in accordance with local regulations. This is necessary because the weight of a mass in one location is not necessarily the same in another location. Also, with time and use, mechanical deviations can occur.

The Position of the [UNITS] key for the Calibration

The (k)g model has no [UNITS] key, but the key for the calibration is located under the overlay.

Location of the [UNITS]

Calibration Using a Calibration Weight

Calibrate the scale with the following calibration weight.

SK-1000:	1000g ± 0.1g	SK-2000:	2000g ± 0.2g
SK-5000:	5000g ± 0.5g	SK-10K:	10kg ± 1g
SK-20K:	20kg ± 2g	SK-30K:	30kg ± 2g

1. Enter calibration mode.

Press the [ON/OFF] key to turn the power off.
While pressing both the [RE-ZERO] and [UNITS] keys, press the [ON/OFF] key. Then, $\boxed{CAL}$ will be displayed.

2. Zero calibration

Press the [RE-ZERO] key to calibrate zero. $\boxed{CAL0}$ will be displayed.

When you have proceeded to the display other than $\boxed{CAL0}$, press the [ON/OFF] key to turn the power off and start over again.

Wait for the stable indicator ⚫ to be displayed and press the [RE-ZERO] key. $\boxed{CALF}$ will be displayed in a few seconds. If the zero calibration only is to be done, press the [UNITS] key. The scale will show $\boxed{End}$ and automatically return to the weighing mode.

3. Span calibration

Place the weight at the center of the platform for accurate calibration. Wait for the stable indicator ⚫ to be displayed and press the [RE-ZERO] key. The scale will show $\boxed{End}$ and the scale will automatically return to the weighing mode.

Calibration by gravity compensation

If you have calibration weights at the capacity of the scale, you can calibrate the scale with the weights instead of compensating for the gravity acceleration.

The scale is calibrated at 9.798 m/sec^2 at the factory. If the gravity acceleration at your location is not the same, calibrate the scale by compensating for the gravity acceleration. (See "The Value of Gravity at Various Locations" and "World Map" and find your location value.)

1. Enter the calibration mode.

Press the [ON/OFF] key to turn the power off. While pressing both the [RE-ZERO] and [UNITS] keys, press the [ON/OFF] key. Then, $\boxed{\text{CAL}}$ will be displayed.

2. Select a digit to be changed.

Press the [UNITS] key. The previously set value, for example $\boxed{9798}$, will be displayed. A digit after the comma "," will be changed by pressing the [RE-ZERO] key. Press the [UNITS] key to move the comma "," and select a digit to be changed.

3. Set the new value.

Change the value of the gravity acceleration using the [RE-ZERO] and [UNITS] keys.

4. Save the value in memory.

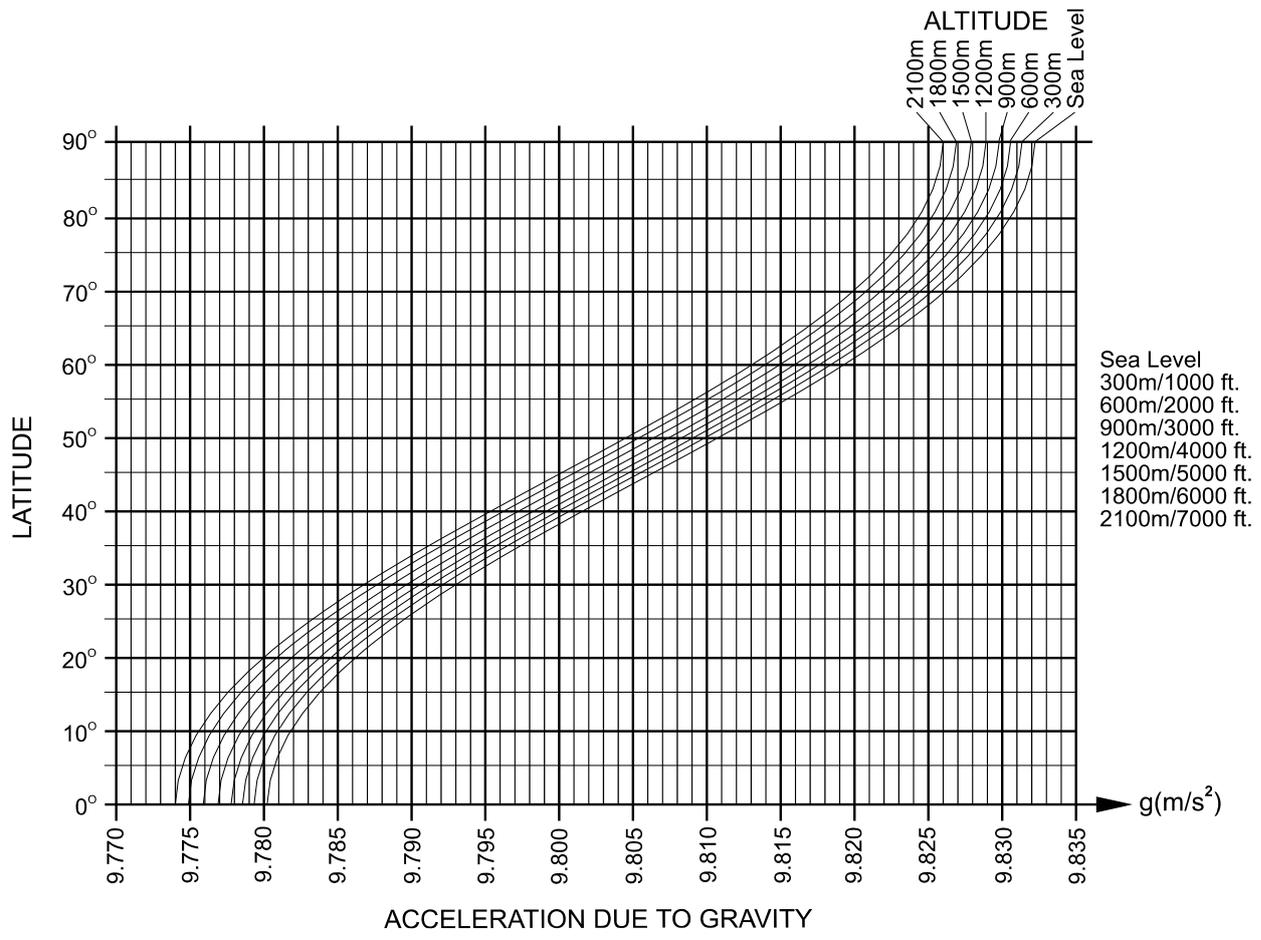Press and hold the [UNITS] key until $\boxed{\text{End}}$ is displayed. The scale will automatically return to the weighing mode.

⬇ SPECIFICATIONS

Model	SK-1000	SK-2000	SK-5000	SK-10K	SK-20K	SK-30K
Capacity	1000 g 2.2 lb	2000 g 4.4 lb	5000 g 11 lb	10 kg 22 lb	20 kg 44 lb	30 kg 66 lb
Resolution	0.5 g 0.001 lb	1 g 0.002 lb	2 g 0.005 lb	0.005 kg 0.01 lb	0.01 kg 0.02 lb	0.02 kg 0.05 lb
Non-linearity	±1g	±2g	±4g	±0.01 kg	±0.02 kg	±0.04 kg
Repeatability	0.5g	1g	2g	0.005 kg	0.01 kg	0.02 kg
Span drift	±0.015% / °C TYP (5°C~35°C / 41°F~95°F)					
Operating temperature	-10°C~40°C / 14°F~104°F, Less than 85%RH					
Display	25 mm / 0.98 inches, 7 segment liquid crystal display					
Display update	Approximately 10 times per second					
Power	6 x R20P / LR20 / "D" size batteries or AC adapter					
Battery life	Approximately 600 hours with manganese type 1200 hours with alkaline cells at 20°C / 68°F					
Platform size	230 mm (W) x 190 mm (D) / 9.05 in(W) x 7.48 in(D)					
Dimensions	244 (W) x 232 (D) x 137 (H) mm / 9.61 (W) x 9.13 (D) x 5.39 (H) inches.					
Weight (approximately.)	1.6 kg / 3.53 lb				1.9 kg / 4.19 lb	
Calibration weight	1000g±0.1g	2000g±0.2g	5000g±0.5g	10kg ±1g	20kg ±2g	30kg ±2g
Accessories	This manual					
Options	AC adapter					

⬇ THE VALUE OF GRAVITY AT VARIOUS LOCATIONS

Location	Value		Location	Value	
Amsterdam	9.813	m/s^2	Manila	9.784	m/s^2
Athens	9.800	m/s^2	Melbourne	9.800	m/s^2
Auckland NZ	9.799	m/s^2	Mexico City	9.779	m/s^2
Bangkok	9.783	m/s^2	Milan	9.806	m/s^2
Birmingham	9.813	m/s^2	New York	9.802	m/s^2
Brussels	9.811	m/s^2	Oslo	9.819	m/s^2
Buenos Aires	9.797	m/s^2	Ottawa	9.806	m/s^2
Calcutta	9.788	m/s^2	Paris	9.809	m/s^2
CapeTown	9.796	m/s^2	Rio de Janeiro	9.788	m/s^2
Chicago	9.803	m/s^2	Rome	9.803	m/s^2
Copenhagen	9.815	m/s^2	San Francisco	9.800	m/s^2
Cyprus	9.797	m/s^2	Singapore	9.781	m/s^2
Djakarta	9.781	m/s^2	Stockholm	9.818	m/s^2
Frankfurt	9.810	m/s^2	Sydney	9.797	m/s^2
Glasgow	9.816	m/s^2	Taichung	9.789	m/s^2
Havana	9.788	m/s^2	Taiwan	9.788	m/s^2
Helsinki	9.819	m/s^2	Taipei	9.790	m/s^2
Kuwait	9.793	m/s^2	Tokyo	9.798	m/s^2
Lisbon	9.801	m/s^2	Vancouver, BC	9.809	m/s^2
London (Greenwich)	9.812	m/s^2	Washington DC	9.801	m/s^2
Los Angeles	9.796	m/s^2	Wellington NZ	9.803	m/s^2
Madrid	9.800	m/s^2	Zurich	9.807	m/s^2

ALTITUDE

2100m
1800m
1500m
1200m
900m
600m
300m
Sea Level

Sea Level
300m/1000 ft.
600m/2000 ft.
900m/3000 ft.
1200m/4000 ft.
1500m/5000 ft.
1800m/6000 ft.
2100m/7000 ft.

LATITUDE

90°
80°
70°
60°
50°
40°
30°
20°
10°
0°

9.770 9.775 9.780 9.785 9.790 9.795 9.800 9.805 9.810 9.815 9.820 9.825 9.830 9.835

$g(m/s^2)$

ACCELERATION DUE TO GRAVITY

WORLD MAP

120° 60° 0° 60° 120° 180°

80°
70°
60°
50°
40°
30°
30°
20°
10°
10°
0°
10°
20°
30°
30°
40°
50°
60°
70°
80°

150° 90° 30° 30° 90° 150°

AND

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