OHAUS®

Valor ™ 3000 Series
Instruction Manual
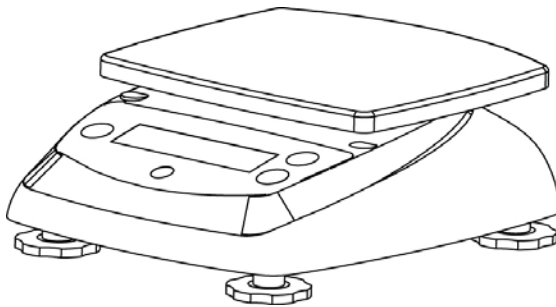
1. INTRODUCTION

This manual contains installation, operation and maintenance instructions for the Valor™ 3000 Series Scales. Please read the manual completely before using the scale.

1.1 Safety Precautions

Please follow these safety precautions:

- Verify that the AC Adapter input voltage matches the local AC power supply.
- Use the scale only in dry locations.
- Do not operate the scale in hostile environments.
- Do not drop loads on the platform.
- Do not place the scale upside down on the pan.
- Service should be performed only by authorized personnel.
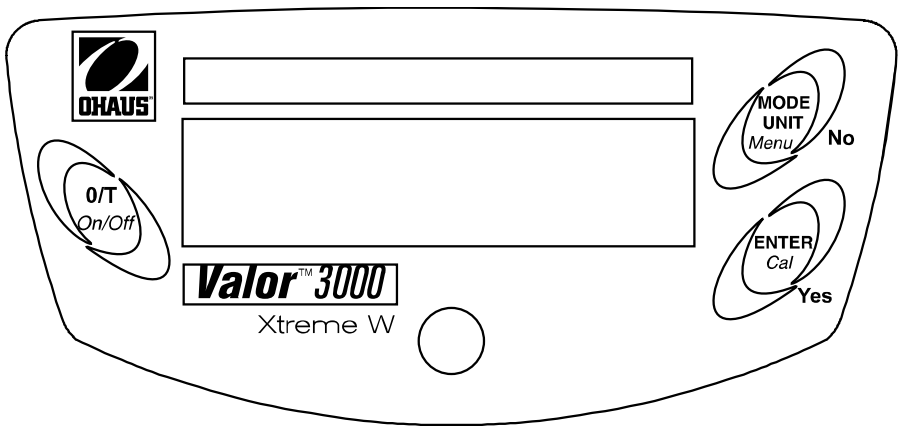
1.2. Controls

Figure 1-1. Controls.

TABLE 1-1. CONTROL FUNCTIONS.

Button	Functions	
O/T On/Off	Short Press: (when off)	Turns scale on
	(when on)	Sets display to zero
		Tares weight of item on pan
	Long Press:	Turns the scale off
MODE/UNIT	Short Press	Steps through active units and modes
Menu	Long Press:	Enters menu
	Short Press (Menu)	"No" (toggles through available settings)
ENTER Cal	Short Press:	Stores 100% reference in % mode
		Stores reference sample in SG mode
	Long Press	Initiates span calibration process
	Short Press(Menu)	"Yes" (selects/accepts displayed setting)

2. INSTALLATION

2.1 Package Contents
- Scale
- Pan
- Power Adapter
- Instruction Manual
- Warranty Card

2.2. Location
Use the scale on a firm, steady surface. Avoid locations with excessive air current, vibrations, heat sources, or rapid temperature changes. Adjust the leveling feet so the bubble is centered in the circle.
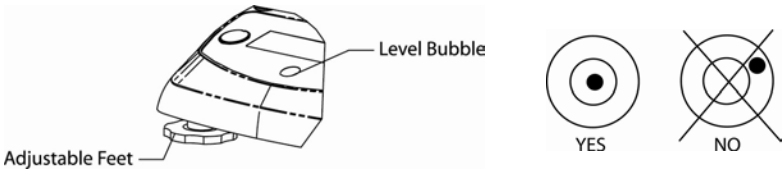
Figure 2-1. Leveling the Scale.

2.3. Transport lock

Open the battery cover. Move the transport lock switch to "Unlock" position. Install 4 C (LR14) batteries, if desired. Reinstall the battery cover
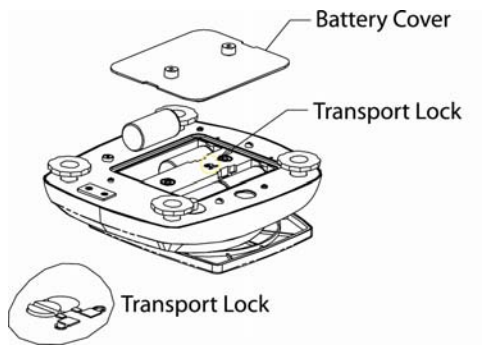

Figure 2-2. Battery Installation.

2.4 Power

The AC adapter (included) may be used to power the scale when battery power is not available. Remove the rubber seal in the bottom. Store it in the location provided. Connect the AC adaptor plug to the input jack.

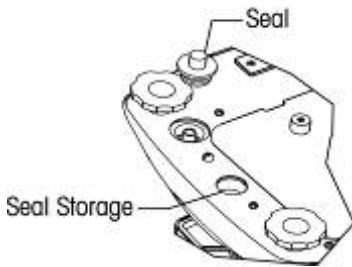**NOTE**: To prevent water ingress during cleaning, insert back rubber seal into the input jack recess.

Figure 2-3. Power Connection and Sealing.

2.5 Initial Calibration

When the scale is first installed, it should be calibrated to ensure accurate weighing results.

Press and hold the **ENTER/Cal** button until CAL is displayed. When the button is again pressed and released, the display shows -C- while zero reading is stored. Next, the display shows the calibration weight value in grams. Place the specified calibration weight (sold separately) on the pan. See Table 2-1 for appropriate weights. The display shows -C- while the reading is stored. The display returns to the previous application mode and scale is ready for use.

TABLE 2-1. CALIBRATION WEIGHTS.

	MODELS				
	V31XH202	V31XH402	V31XH2	V31XH4	V31X501
Calibration Weights	200g	400 g	2 kg	4 kg	500 g
	MODELS				
	V31X3	V31X6	V31XW301	V31XW3 / V31X3N	V31XW6 / V31X6N
Calibration Weights	3 kg	6 kg	300 g	3 kg	6 kg

3. OPERATION

3.1 Weighing Mode

Use this mode to measure the weight of a sample in the selected unit of measure.

1. Press **MODE/UNIT/Menu** until the desired unit icon is displayed.
2. Put an empty container on the pan, then press **O/T/On/Off** to tare the container weight.
3. Add material to the container. The display shows the weight of the material.

3.2 Percent Mode
Use this mode to measure the weight of a sample as a percentage of a reference weight.

1. Press **MODE/UNIT/Menu** until Set.rEF and the % icon are displayed.
2. Press **No** to use the reference weight in memory and proceed to step 6.
3. Press **Yes** to establish a new reference. Scale display will now blink until reference is stored.
4. Put an empty container on the pan, then press **O/T/On/Off** to tare the container weight.
5. Add the desired amount of material to the container, then press **ENTER/Cal** to store the displayed weight. The display shows 100%.
6. Replace the reference material with new material. The display shows the percentage of the sample compared to reference weight.

3.3 Specific Gravity Mode
Use this mode to measure the specific gravity of a sample.

1. Press **MODE/UNIT/Menu** until Set.rEF and the S icon are displayed.
2. Press **No** to use the reference weight in memory and proceed to step 6.
3. Press **Yes** to establish a new reference weight. Scale display will now blink until reference is stored.
4. Put an empty container on the pan, then press **O/T/On/Off** to tare the container weight.
5. Fill the container with water, then press **ENTER/Cal** to store the displayed weight. The display shows the water weight with the S icon blinking.
6. Replace the water with the same volume of sample material, then press **ENTER/Cal**. The display shows the specific gravity of the sample.

3.4 Fluid Ounce Mode
Use this mode to measure the fluid ounce volume of a sample.

1. Press **MODE/UNIT/Menu** until the FL icon is displayed.
2. Put an empty container on the pan, then press **O/T/On/Off** to tare the container weight.
3. Fill the container with sample material. The display shows the volume of the sample.

4. SETTINGS
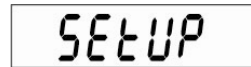The Menu allows the user to customize scale settings.

4.1 Menu Navigation
Press and hold **MODE/UNIT/Menu** button until SEtUP is displayed, then release it. Press **Yes** to enter the displayed menu. or press **No** to advance to the next menu. Once in the menu, press **Yes** to view the menu item setting or press **No** to move to the next menu item. When viewing the setting, press **Yes** to accept the setting, or press **No** to change the setting. When End is displayed, press **Yes** to advance to the next menu or **No** to return to the top of the current menu.

4.2 Setup Menu

SEtUP

STABILITY RANGE
Set the stability range to 0.5d, **1d**, 2d or 5d (divisions).

StAb
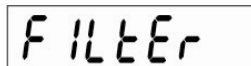
AUTO ZERO TRACKING RANGE
Set the automatic zero tracking range to OFF, **0.5d**, 1d, 3d (divisions).

A2t

FILTER LEVEL
Set the filter level to LO (low), **ME** (medium), or HI (high).

F ILtEr

BACK LIGHT
Set the back light functionality to OFF (always off), ON (always on) or **Auto** (turns on when a key is pressed or the displayed weight changes).

L I6Ht

AUTO OFF
Set the automatic shut off functionality to **ON** (shut off after 5 minutes) or OFF (stays on).
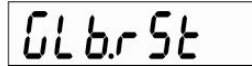
A OFF

POWER ON UNIT
Set the unit of measure displayed at startup to g, kg, lb, oz or lb:oz.

$$P.Un\ It$$

GLOBAL RESET
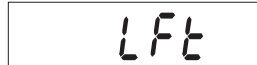Select YES (reset menus to factory defaults) or NO (do not reset).
Units will be set to factory defaults.

$$GLb.rSt$$

Menu	Default
Stability Range	1d
Auto zero Tracking	0.5d
Filter Level	ME
Back Light	Auto
Auto off	On

LEGAL FOR TRADE
This menu item is only included in models V31XW301, V31XW3, V31XW6, V31X3N and V31X6N. Refer to Section 5 for details.
Set the legal for trade operation to ON or **OFF**.

$$LFt$$

NOTE: When Legal For Trade is set to ON, the Menu settings are affected as follows:
• Calibration is disabled and hidden.
• The Stability range setting is locked at the 1d setting and hidden.
• The Auto Zero Tracking range setting is locked at the 0.5d setting and hidden.
• The Power On Unit is locked at its current setting and hidden.
• The Filter setting is locked at its current setting and hidden.
• The Backlight setting is unlocked and visible.
• The Auto Off setting is unlocked and visible.
• The Global reset setting is locked at the NO setting and hidden.
• The Kilogram, Gram, Pound and Ounce units are locked at their current setting (ON or OFF) and hidden.
• The Pound:Ounce and Fluid Ounce units are locked at the OFF setting and hidden.
• The Percent mode is locked at its current setting (ON or OFF) and hidden.
• The Specific Gravity mode is locked at the OFF setting and hidden.

NOTE: When Legal for Trade is set to ON, it is necessary to set the security switch to ON before exiting the menu. If the security switch is not set to ON, the message "SW.OFF" is displayed and the indicator returns to the menu.

END
Advance to the Unit/Mode menu (Yes) or back to Setup (No).

4.3 Unit/Mode Menu

GRAM UNIT
Set grams ON or OFF.

$$\boxed{\quad O\Pi \quad {}_{\text{g}}}$$

KILOGRAM UNIT
Set kilograms ON or OFF.

$$\boxed{\quad OFF \quad {}_{\text{kg}}}$$

POUND UNIT
Set pounds ON or OFF.

$$\boxed{\quad OFF \, {}_{\text{lb}}}$$

OUNCE UNIT
Set ounces ON or OFF. If ON is selected, set DEC
(decimal ounces) or FrA (fractional ounces)

$$\boxed{\quad OFF \, {}_{\text{oz}}}$$

POUND OUNCE UNIT
Set pound ounces ON or OFF. If On is selected, set DEC
(decimal ounces) or FrA (fractional ounces)

$$\boxed{\quad OFF \, {}_{\text{lb:oz}}}$$

FLUID OUNCE MODE
Set fluid ounces ON or OFF.

$$\boxed{\quad OFF \, {}^{\text{FL}}}$$

PERCENT MODE
Set percent ON or OFF.

$$\boxed{\quad OFF \, {}^{\text{%}}}$$

SPECIFIC GRAVITY MODE
Set specific gravity ON or OFF.

$$\boxed{\quad OFF \, {}_{\text{s}}}$$

END
Exit to the previous Unit/Mode (Yes) or g (No).

5. LEGAL FOR TRADE

When model V31XW301, V31XW3, V31XW6, V31X3N or V31X6N is used in trade or a legally controlled application it must be set up, verified and sealed in accordance with local weights and measures regulations. It is the responsibility of the purchaser to ensure that all pertinent legal requirements are met.

5.1 Settings

Before verification and sealing, perform the following steps:
• Set the Security Switch to the OFF position.
• Set LFT to OFF under Setup menu.
• Calibrate the scale.
• Enter the Units menu.
• Set the desired units of measure to ON.
• Exit the Units menu.
• Enter the Setup menu.
• Set the desired Filter level.
• Set the desired Power On Unit.
• Set LFT to ON.
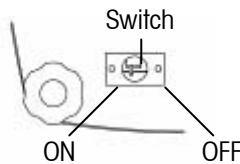• Set the Security Switch to ON.
• Exit the Setup menu.

Figure 5-1. Security Switch Settings

5.2 Verification

The local weights and measures official or authorized service agent must perform the verification procedure.

5.3 Sealing

The local weights and measures official or authorized service agent must apply a security seal to prevent tampering with the settings. Refer to the illustrations below for sealing methods.

<u>Wire Seal</u>

Remove the spacers under the cross drilled screws. Re-install the screws and feed the wire through the cross drilled holes.
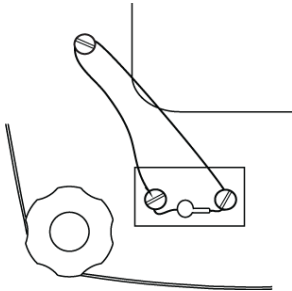
<u>Paper Seal</u>

Place the paper seals over the screws and sealing spacers.

Figure 5-2. Sealing methods.

6. MAINTENANCE

6.1 Troubleshooting

The following table lists common problems and possible causes and remedies.
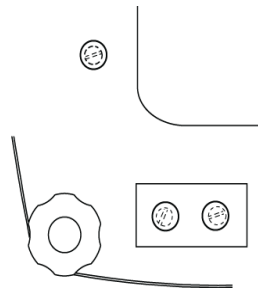If the problem persists, contact Ohaus or your authorized dealer.

TABLE 6-1. TROUBLESHOOTING.

Symptom	Possible Cause	Remedy
Cannot turn on	No power to scale	Verify connections and voltage.
Poor accuracy	Improper calibration • Unstable environment	Perform calibration • Move scale to suitable location
Cannot calibrate	Unstable environment • Incorrect calibration weight	Move the scale to suitable location • Use correct calibration weight
Cannot access mode	Mode not enabled	Enter menu and enable mode
Cannot access unit	Unit not enabled	Enter menu and enable unit
Err 8.1	Pan has load during power on	Remove weight from pan and re-zero.
Err 8.2	Pan was removed prior to power on	Install pan and re-zero.
OVER	Weight on pan exceeds capacity	Remove weight from the pan
UNDER	Pan was removed during weighing	Re-install pan
Err 9	Factory calibration data corrupted	Contact Ohaus or an authorized service agent • Perform service calibration
REF Err	Reference Weight is too small	Use larger sample
LOWrEF	Reference Weight is too low for accurate percent weighing.	Continue to weigh with less accurate results

6.2 Service Information

If the troubleshooting section does not resolve or describe your problem, contact your authorized Ohaus service agent. For service assistance or technical support in the United States call toll-free 1-800-526-0659 between 8.00 AM and 5:00 PM EST. An Ohaus product service specialist will be available to provide assistance. Outside the USA, please visit our web site, www.ohaus.com to locate the Ohaus office nearest you.

7. TECHNICAL DATA

The technical data is valid under the following ambient conditions:
Ambient temperature: 0°C to 40°C
Relative humidity: 10% to 95% relative humidity, non-condensing
Height above sea level: Up to 4000 m
Operability is assured at ambient temperatures between 0°C and 40°C
Power: AC adapter   9VDC @ 1.2A max. output
Protection: Protected against dust and water
Pollution degree: 2
Installation category: Class III
EMC: See Declaration of Conformity

7.1 Specifications

TABLE 7-1. SPECIFICATIONS

Model	V31XH202	V31XH402	V31XH2	V31XH4	V31X501
Capacity	200	400	2000	4000	500
Repeatability (g)	0.01		0.1		
Linearity (g)	±0.01		±0.1		
Approval Class	-				
Ingress Protection	-				
Weighing Units	g, kg, lb, oz, lb:oz				
Application Modes	Weigh, Percent weighing, Specific Gravity, Fluid Ounces				
Tare range	To capacity by subtraction				
Stabilization Time	≤3 seconds				
Power Requirements	9 VDC @ 1.2A max. AC adaptor (supplied) or 4 C (LR14) batteries (not supplied)				
Calibration	Digital with external weight				
Display Type	6-digit 7-segment LCD with white LED backlight				
Display Size	15 mm / 0.6″ digits				
Keypad	3-button overlay				
Pan Size (mm / in)	120 / 4.7		146 x 158 / 5.7 x 6.2		120 / 4.7
Net Weight (kg / lb)	1.2 / 2.6		1.3 / 2.9		1.2 / 2.6
Shipping Weight (kg/lb)	2.0 / 4.3		2.1 / 4.6		2.0 / 4.3

TABLE 7-1. SPECIFICATIONS

Model	V31X3	V31X6	V31XW301	V31XW3/ V31X3N	V31XW6/ V31X6N
Capacity	3000	6000	300	3000	6000
Repeatability (g)	1		0.2	1	2
Linearity (g)	±1		±0.2	±1	±2
Approval Class	-		III		
Ingress Protection	-		IP65 / *		
Weighing Units	g, kg, lb, oz, lb:oz				
Application Modes	Weigh, Percent weighing, Specific Gravity, Fluid Ounces				
Tare range	To capacity by subtraction				
Stabilization Time	≤3 seconds				
Power Requirements	9 VDC @ 1.2A max. AC adaptor (supplied) or 4 C (LR14) batteries (not supplied)				
Calibration	Digital with external weight				
Display Type	6-digit 7-segment LCD with white LED backlight				
Display Size	15 mm / 0.6" digits				
Keypad	3-button overlay				
Pan Size (mm / in)	146 x 158 / 5.7 x 6.2				
Net Weight (kg / lb)	1.3 / 2.9		1.4 / 3.1		
Shipping Weight (kg/lb)	2.1 / 4.6		2.2 / 4.8		

* Models V31X3N and V31X6N are not rated IP65

7.2. Capacity and Readability

TABLE 7-2. CAPACITY AND READABILITY

UNITS	SECURITY SWITCH	MODELS				
		V31XH202	V31XH402	V31XH2	V31XH4	V31X501
g	ON	NA	NA	NA	NA	NA
	OFF	200.00 x 0.01	400.00 x 0.01	2000.0 x 0.1	4000.0 x 0.1	500.0 x 0.1
kg	ON	NA	NA	NA	NA	NA
	OFF	0.20000 x 0.00001	0.40000 x 0.00001	2.0000 x 0.0001	4.0000 x 0.0001	0.5000 x 0.0001
oz	ON	NA	NA	NA	NA	NA
	OFF	7.0550 x 0.0005	14.1095 x 0.0005	70.550 x 0.005	141.095 x 0.005	17.635 x 0.005
lb	ON	NA	NA	NA	NA	NA
	OFF	0.44090 x 0.00005	0.88185 x 0.00005	4.4090 x 0.0005	8.81850 x 0.0005	1.1025 x 0.0005
lb:oz	ON	NA	NA	NA	NA	NA
	OFF	NA	NA	4lb : 6.55 oz x 0.01 oz	8lb : 13.10 oz x 0.01 oz	1lb : 1.64 oz x 0.01 oz
oz (fra)	ON	NA	NA	NA	NA	NA
	OFF	7 x 1/8	14 1/8 x 1/8	70 ½ x 1/8	141 1/8 x 1/8	17 5/8 x 1/8
lb: oz (fra)	ON			NA	NA	NA
	OFF	NA	NA	4lb : 6 ½ oz x 1/8 oz	8lb : 13 1/8 x 1/8 oz	1lb : 1 5/8 oz x 1/8 oz
fl	ON	NA	NA	NA	NA	NA
	OFF	6.7630 x 0.0005	13.5255 x 0.0005	67.630 x 0.005	135.255 x 0.005	16.905 x 0.005

TABLE 7-2. CAPACITY AND READABILITY

| UNITS	SECURITY SWITCH	MODELS				
		V31X3	V31X6	V31XW301	V31XW3 / V31X3N	V31XW6 / V31X6N
g	ON	NA	NA	300.0 x 0.2	3000 x 1	6000 x 2
	OFF	3000 x 1	6000 x 1	300.0 x 0.1	3000.0 x 0.5	6000 x 1
kg	ON	NA	NA	0.3000 x 0.0002	3.000 x 0.001	6.000 x 0.002
	OFF	3.000 x 0.001	6.000 x 0.001	0.3000 x 0.0001	3.0000 x 0.0005	6.000 x 0.001
oz	ON	NA	NA	10.58 x 0.01	105.80 x 0.05	211.6 x 0.1
	OFF	105.80 x 0.05	211.65 x 0.05	10.585 X 0.005	105.80 x 0.02	211.60 x 0.05
lb	ON	NA	NA	0.6615 x 0.0005	6.615 x 0.005	13.225 x 0.005
	OFF	6.615 x 0.005	13.230 x 0.005	0.6615 x 0.0005	6.615 x 0.002	13.225 x 0.005
lb:oz	ON	NA	NA	NA	6 lb : 9.80 oz x 0.05 oz	13 lb : 3.6 oz x 0.1 oz
	OFF	6 lb : 9.80 oz x 0.05 oz	13lb : 3.65 oz x 0.05 oz	NA	6 lb : 9.80 oz x 0.02 oz	13 lb : 3.60 oz x 0.05 oz
oz (fra)	ON	NA	NA	10 ½ x 1/8	105 ½ x 1/8	211 ½ x 1/8
	OFF	105 ½ x 1/8	211 ½ x 1/8	10 ½ x 1/8	105 ½ x 1/8	211 ½ x 1/8
lb: oz (fra)	ON	NA	NA	NA	6lb : 9 ½ oz x 1/8oz	13 lb : 3 ½ oz x 1/8oz
	OFF	6lb : 9 ½ oz x 1/8 oz	13 lb : 3 ½ oz x 1/8 oz	NA	6lb : 9 ½ oz x 1/8 oz	13 lb : 3 ½ oz x 1/8 oz
fl	ON	NA	NA	10.14 x 0.01	101.45 x 0.05	202.9 x 0.1
	OFF	101.45 x 0.05	202.90 x 0.05	10.140 x 0.005	101.44 x 0.02	202.90 x 0.05

7.3 Drawings
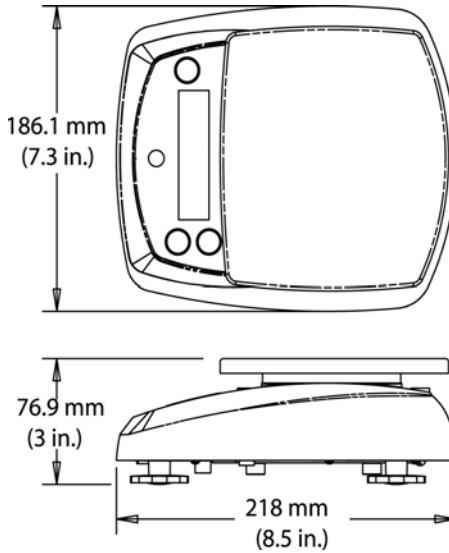
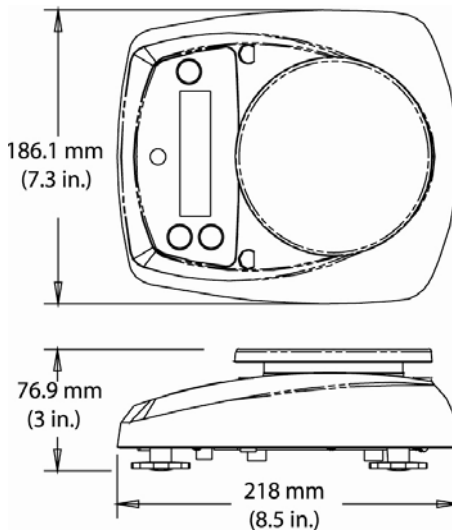Figure 7-1. All Models except V31XH202, V31XH402, V31X501

Figure 7-2. Models V31XH202, V31XH402, V31X501

Accessories

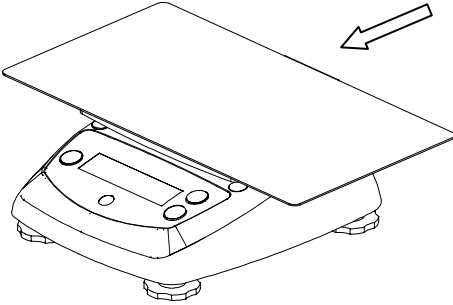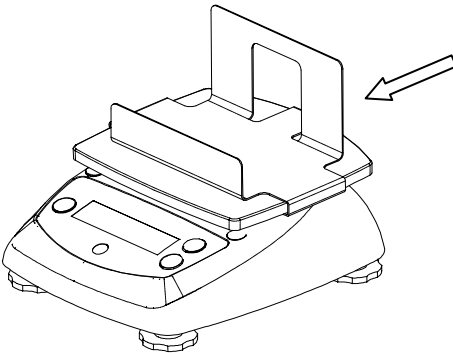Slide accessories over the rear of the pan assembly and position them as shown in the illustration below.

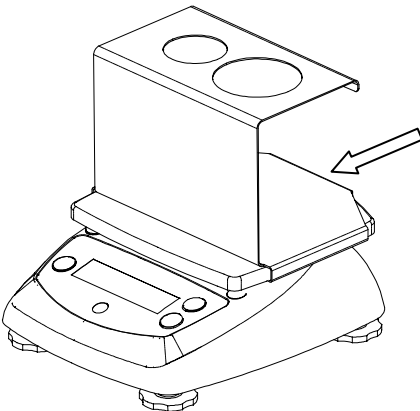Figure 7-3. Sandwich pan

Figure 7-4. French fries holder

Figure 7-5. Ice cream cone holder

7.4 Compliance

Compliance to the following standards is indicated by the corresponding mark on the product.

Marking	Standard
$C \epsilon$	This product conforms to the EMC directive 2004/108/EC, the Low Voltage Directive 2006/95/EC and the Non-automatic Weighing Instruments Directive 90/384/EEC. The complete Declaration of Conformity is available from Ohaus Corporation.
	AS/NZS4251.1 Emission, AS/NZS4252.1 Immunity
	NSF/ANSI 169 – 2005
	NSF/ANSI /3-A 14159-1 - 2002

Important notice for verified weighing instruments

 Weighing Instruments verified at the place of manufacture bear one of the preceding mark on the packing label and the green 'M' (metrology) sticker on the descriptive plate. They may be put into service immediately.

 Weighing Instruments to be verified in two stages have no green 'M' (metrology) on the descriptive plate and bear one of the preceding identification mark on the packing label. The second stage of the initial verification must be carried out by the approved service organization of the authorized representative within the EC or by the national weight & measures (W+M) authorities.

The first stage of the initial verification has been carried out at the manufacturers work. It comprises all tests according to the adopted European standard EN 45501:1992, paragraph 8.2.2.

If national regulations limit the validity period of the verification, the user of the weighing instrument must strictly observe the re-verification period and inform the respective W+M authorities.

Disposal

In conformance with the European Directive 2002/96 EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.

For disposal instructions in Europe, refer to www.ohaus.com/weee.

FCC Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Industry Canada Note

This Class B digital apparatus complies with Canadian ICES-003.

ISO 9001 Registration

In 1994, Ohaus Corporation, USA, was awarded a certificate of registration to ISO 9001 by Bureau Veritus Quality International (BVQI), confirming that the Ohaus quality management system is compliant with the ISO 9001 standard's requirements. On May 15, 2003, Ohaus Corporation, USA, was re-registered to the ISO 9001:2000 standard.

LIMITED WARRANTY

Ohaus products are warranted against defects in materials and workmanship from the date of delivery through the duration of the warranty period. During the warranty period Ohaus will repair, or, at its option, replace any component(s) that proves to be defective at no charge, provided that the product is returned, freight prepaid, to Ohaus. This warranty does not apply if the product has been damaged by accident or misuse, exposed to radioactive or corrosive materials, has foreign material penetrating to the inside of the product, or as a result of service or modification by other than Ohaus. In lieu of a properly returned warranty registration card, the warranty period shall begin on the date of shipment to the authorized dealer. No other express or implied warranty is given by Ohaus Corporation. Ohaus Corporation shall not be liable for any consequential damages.

As warranty legislation differs from state to state and country to country, please contact Ohaus or your local Ohaus dealer for further details.