Checkout Scale

Ariva-S

Checkout Scale

Service Manual

METTLER TOLEDO

30064447
R00

WARNING!

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

Publication Revision History

Part Number	Date	Revisions
30064447	07/13	New manual

Precautions

READ this manual BEFORE operating or servicing this equipment.

FOLLOW these instructions carefully.

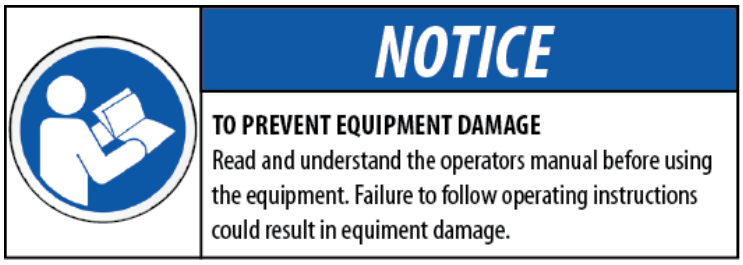
SAVE this manual for future reference.

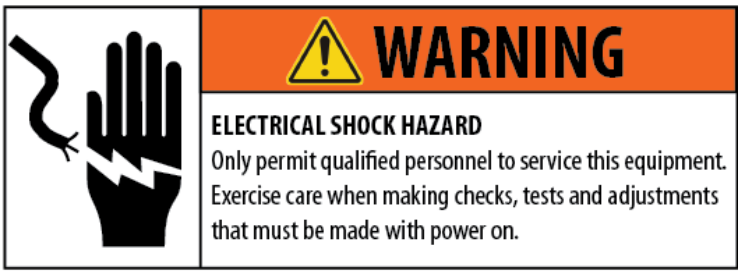
DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

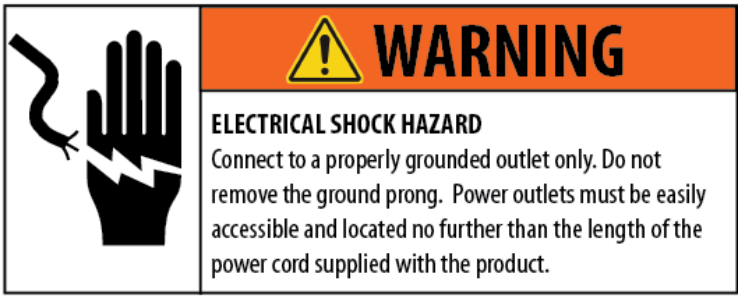
ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

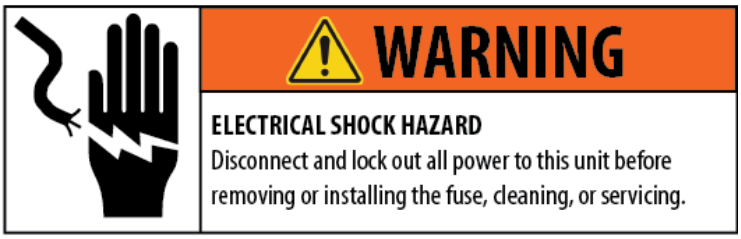
CALL METTLER TOLEDO® for parts, information, and service.

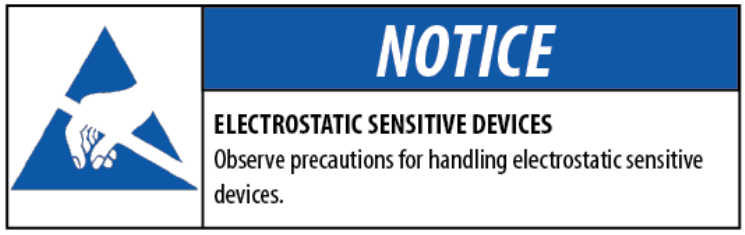
METTLER TOLEDO® reserves the right to make refinements or changes without notice

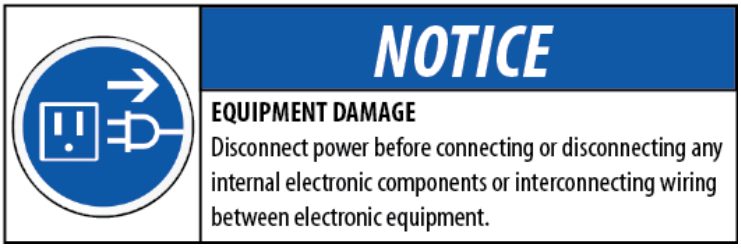












Contents

1 Specifications

General

The Ariva-S is designed to provide weight data for various POS systems and electronic cash registers. The Ariva-S is developed, produced, and tested in a Mettler Toledo facility that has been audited and registered according to international ISO 9001 quality standards and the ISO 14000 environment control program.

Standard Features

- Platter: Stainless Steel: 280x316mm
- Power supply: External 12 VDC power supply.
- Tower Display: LCD with backlight, single line for Weight Only applications, four line for Price Computing applications, and a Text Display for Price Computing applications with text
- LCD: 13.5mm high character weight (5 digits); unit price (6 digits); total price (6 digits).
- Base Mount Display (Weight Only with Rounded Platter)
- Keyboard: two keys, with tactile and tone feedback when pressing the key.
- A sealable Setup and Calibration Software switch
- Basic functions: Zero; Tare
- RS-232 interface and USB interface

Scale Capacity

Product	Scale Capacity	Scale Build	Increment (e)	Interval	Min (20*e)
Ariva-S	15 kg	0-15 kg	0.005 kg	Single	100 g
		0-6/6-15 kg	0.002/0.005 kg	Dual	40 g
	30 lbs	0-30 lbs	0.01 lbs	Single	0.2lbs
		0-15/15-30 lbs	0.005/0.01 lbs	Dual	0.1lbs
	6 kg	0-3/3-6kg	0.001/0.002kg	Dual	20g
	15 lbs	0-15	0.005 lbs	Single	0.1 lbs
		0-6/6-15	0.002/0.005 lbs	Dual	0.04lbs
	240 oz	0-240 oz	0.01 oz	Single	2 oz

Physical Dimensions

Image	Model	Version	Length (L)	Width (W)	Height (H)
	Ariva-S	N/A	11” (28cm)	12.45” (31.6cm)	2.17” (5.5cm)

The approximate shipping weight: gross weight of 5.6kg, net weight of 4.5kg.

The shipping carton dimensions: 445x390x160mm(L x W x H)

Power Requirements

One external 12 VDC / 840 mA power supply provides power to the scale.

Temperature and Humidity

Working temperature range: -10 to +40 °C (+14 to +114F) at 10 to 85% humidity, non-condensing.

Storage temperature range: from -25 to +50°C at 10 to 85% humidity, non-condensing.

Weights and Measures Approval

- Load cell Test Certificate: TC7979
- EC Type-approval Certificate: T8182
- Software Test Certificate: TC8039
- Software Test Certificate: TC7285 (when scale is used with VCODisp)
- NTEP: Certificate of Conformance Number 12-090
- Canadian Approval: AM-5900

2 Installation

Precautions

Before installing the Ariva scale, keep in mind the following factors which might have a negative influence on the scale's operation:

- Be sure the scale is leveled properly.
- Vibration diminishes the scale's ability to measure accurately. Excessive vibration from equipment such as conveyors can cause inaccurate and non-repeatable readings.
- Air currents can also diminish a scales performance. Avoid placing the scale in front of or directly under air vents.
- Other than items being weighed, keep the scale free from objects rubbing or pressing against the platter.

Contents of Packaging

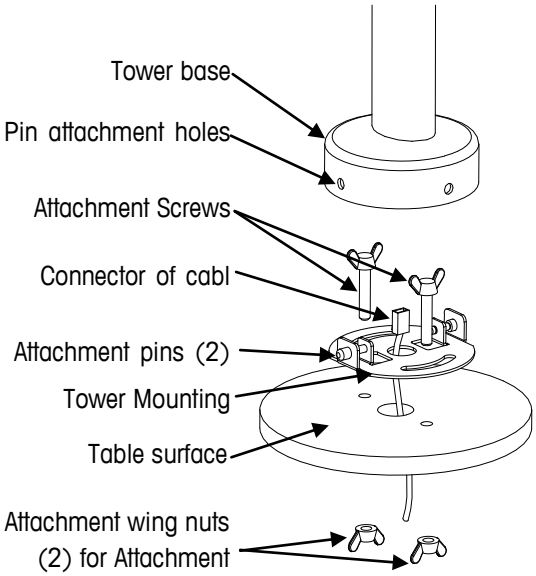
Package contents for the Ariva-S include:

- Ariva-S scale base
- Stainless Steel Platter
- Universal AC-DC power adapter
- *Display types:*
    i. *One line display, including two cables and base bracket for alternate mounting.*
    ii. *Four line display, including cable.*
    iii. *Four line text display, including cable.*
- Cleaning Brush (North America Only)
- RS-232 POS communications cable (p/n: 72256235)
- *Optional Type A USB communications cable (p/n: 72256236)*

Setup

Open the box, carefully remove the packing material, take all items out of the carton.

Attach the display as described below, depending on which version of scale you ordered:



For Price Computing Version:

A: Pull the connector of the cable through the holes of the table surface and tower mounting bracket

B: Put (2) screws though the (2) arch holes on the bracket and (2) holes on the table surface

C: Attach cover to the surface of table with (2) nuts

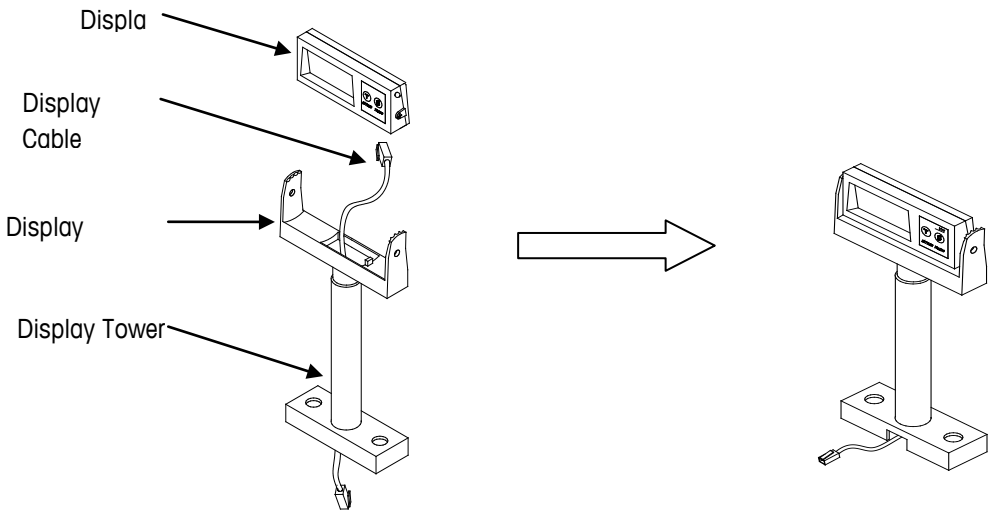
D: Connect the cable to the connector at the bottom of the tower display

E: Attach the base of the display to the mounting bracket by insuring that the (2) pins on the bracket are inserted in the holes of the base to attach the tower and snap the tower into place.

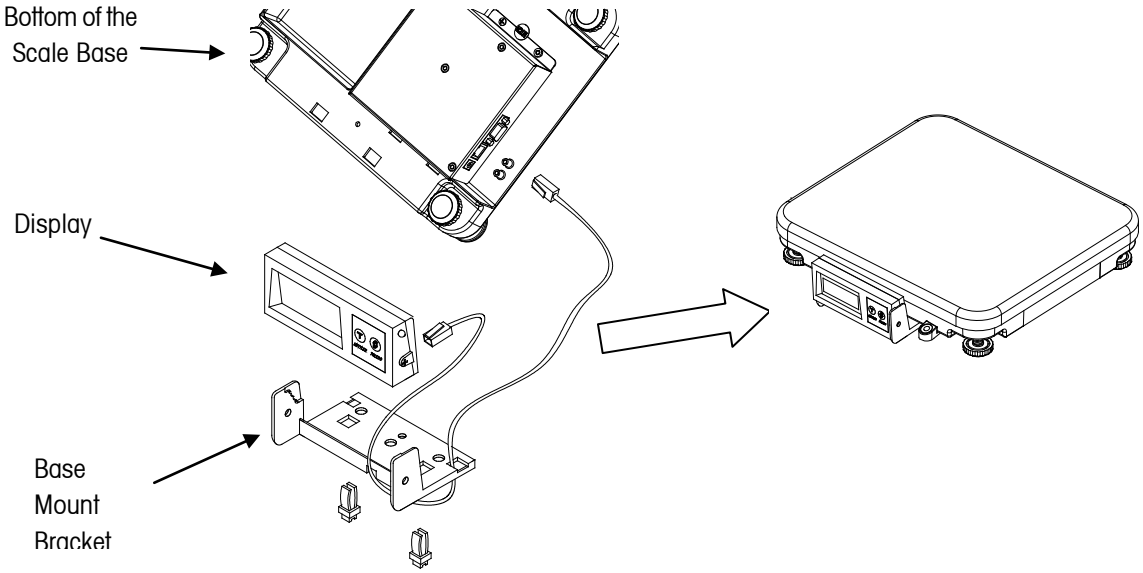
For Weigh Only Version:

The Weigh Only version comes with a tower mount.

- Assemble the Weight Only tower as is illustrated here:



Assemble the base mount as illustrated below:



- Level the scale by turning the adjustable feet on the bottom of the unit. Adjust the feet until the level bubble is in the center of the circle.

  Bubble indicator:

  Correct Wrong

- Put the platter on top of the Ariva scale base.
- Connect the tower display cable to the scale.
- Connect the power cord from the wall transformer to the scale base

Power Up Sequence

Note: Before powering on the Ariva scale, always make sure there is nothing on the platter.

Plug the adapter into a properly grounded AC power outlet. The scale will go through a series of self-tests and then will proceed to normal operating mode. The power-up sequence is as follows:

- The scale software IDs (version numbers) are displayed during scale start-up.
- To view the software IDs for a longer period of time, double-click the Zero button while in normal weighing mode. In this case, the software IDs are shown for 6 seconds on a 4-line display and for 2 seconds each on a 1-line display.

Items displayed during power up sequence are as follows:

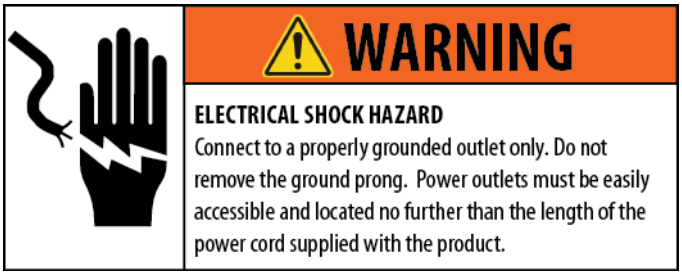
- Country and GEO codes
- Software part number
- Weighing package ID
- Signal processing ID

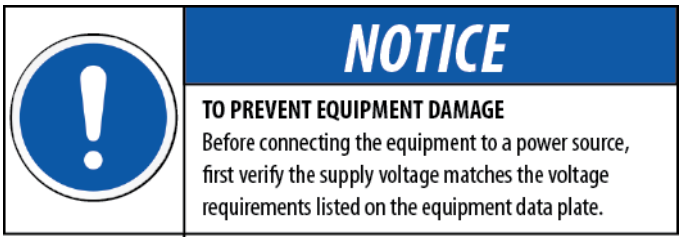
- Application software ID
- License indication (if applicable)

Power Consumption

The maximum power consumption when connected to a four line display with the backlight illuminated is 0.6W.

The minimum power consumption when no display is connected or when the backlight is not illuminated is 0.4W.



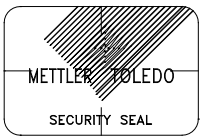


Sealing

After installation is complete, legal-for-trade applications require sealing the enclosure so the settings cannot be changed.

The label sealing sequence

Security stickers (or paper seals) come in various shapes and colors depending on locale. Below is an example of one version of a security sticker.

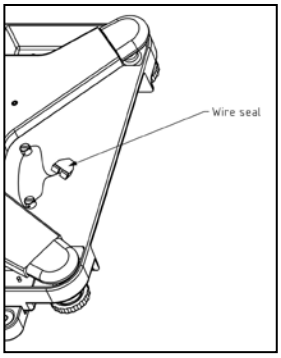


Security Sticker 28x19mm, material Vinyl white 3690 E UL, text color black.

There are two kinds of sealing: wire and paper.

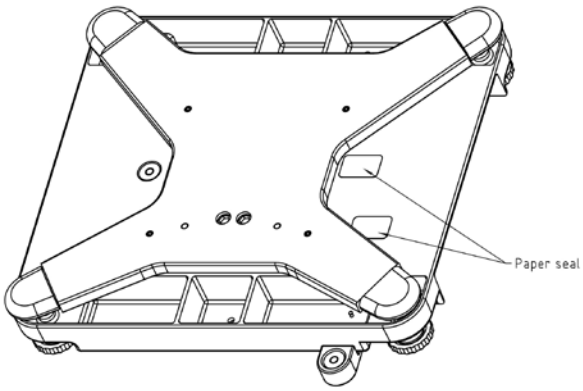
The wire sealing sequence is as follows:

- Install 2 special through-hole sealing screws.
- Tighten these two screws and run a wire seal through the holes in the heads of the screws.
- Apply the plastic seal and secure tightly.



The paper sticker sealing process is as follows:

- Two paper stickers are required for sealing. The first sticker covers the hole used for accessing the calibration switch. The second covers the head of the screw which holds the bottom cover in place. Position these paper stickers as shown below.



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For your notes

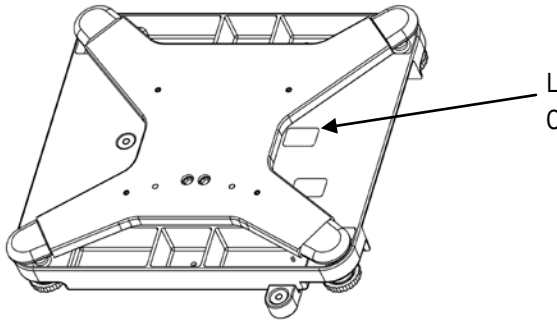
3 Setup and Calibration

Setup Modes

There are two setup modes. The first is called "Service Mode" and it allows full access to all soft switches and scale calibration for qualified technicians only. The second is called "User Mode" and it only allows access to soft switches that do not affect the metrology of the scale.

Service Setup Mode

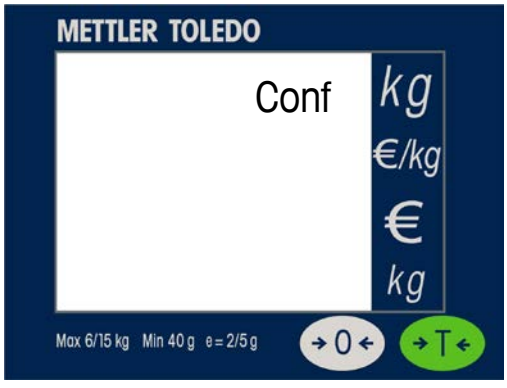
In order to access the Service Mode on the Ariva-S, break the paper seal on top of scale, insert a thin rod such as a paper clip or a small screwdriver through the calibration hole and press the calibration button down.



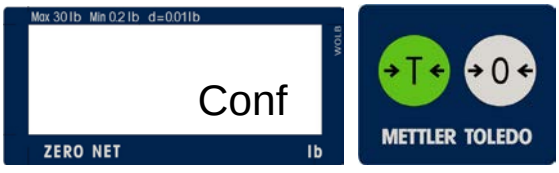
To change settings using the Ariva display, follow the directions below.

During the set up procedure the display will start off by showing the following. This is the configuration mode for the scale.

Price Computing Version



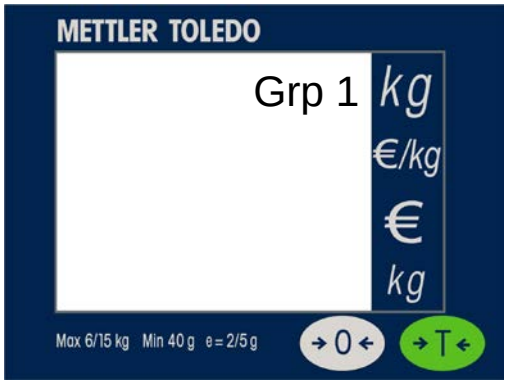
Weigh Only Version



Press the Zero Key:

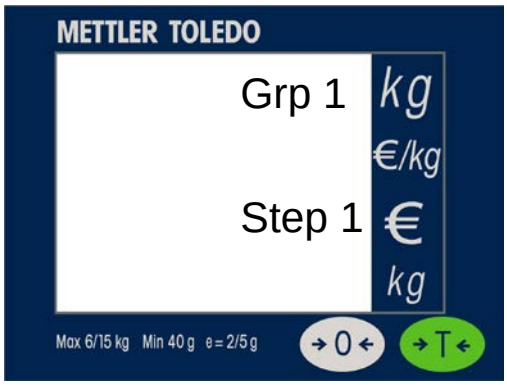
Price Computing Version

Weigh Only Version



You can press the Tare key to move to Grp 2, 3, 4 or 5. To go into a particular Group, press the Zero Key. Below is what you will see when going into the first Step of Group 1.

Price Computing Version



Weigh Only Version

Refer to the Setup Soft Switch Default Table for all available settings.

User Setup Mode

This mode allows an operator to change softswitches that are not metrologically important. To get into User mode, press and hold **>T<** key for eight seconds until "CONF" is displayed. Refer to the Section **'Set Up Softswitch and Default Table'** for the accessibility of softswitches via keyboard.

The scale can be configured for your specific needs through a special interactive set up procedure. In order to access the various prompts, you must utilize the following keys during the scale setup mode.

This key is used to accept a choice and then advance one softswitch at a time.

This key is used to step through the options.

Setup Soft Switch and Default Table

Group.Step	Function	Possible Selections	User Mode Access
Group 1		**Press Zero to Enter Group 1** **Press Tare to go to Group 2**	
1.1	Country Selection	**DE** (Germany) (Index 0) **FR** (France) (Index 1) **US** (USA) (Index 2…) **AT** (Austria) **ES** (Spain) **PL** (Portugal) **BE** (Belgium, **NL** (Netherland) **GB** (England) **IR** (Ireland) **IT** (Italy) **PO** (Poland) **CH** (Switzerland) **UA** (Ukraine) **RU** (Russia) **KZ (**(Kazachstan) **HU** (Hungary) **SK** (Slovakia) **CZ** (Czech Republic) **CR** (Croatia) **SL** (Slovenia) **CN** (China) **CA** (Canada) **Ar** (Argentina) **dEf** (General Export (default)) (Index 24) *Note: Changing the Country Selection will change many of the menu defaults below.*	No
1.2	Initialize to Defaults	**YES** – Menu items will be reset to factory defaults **NO** – Menu items will remain in current configuration. *Note: defaults are determined by Country Selection.*	No
1.3	GEO Code	**0** through **31** – See GeoCal chart below	No
1.4	Decimal point	**ON** – decimal point (period (“.”)) **OFF** –comma (“,”)	No
1.5*****	Decimal Position	**0 - 4** – Number of digits to the right of the Decimal Point for Unit and Total Price fields.	No
1.6*****	Total Price Rounding (To Nearest 0 or 5)	**ON** – The total price will round up or down to 0 or 5. **OFF** – Total price will not be rounded.	No

Determines when next weight transaction can begin	1.7	Return to Zero	**NO** - Return to Zero **not** Required (see 1.8, below.) **YES** - Return to Zero Required between weighing transactions.	No
	1.8	Weight Change Required (between two weight readings if Return to Zero **not** required.)	**00** - No Weight Change Required between weight readings. - The same weight can be reported multiple times. o Some POS systems prefer this configuration. **yy** - weight change (in divisions) required. yy = 01 to 50 in steps of 1 from 1 to 10, then in steps of 5. *If (menu item 1.7 = **No)** then 1.8 will determine how much change in weight (measured in weight divisions) is required between successive weight readings.* *If (menu item 1.7 = **Yes)** then 1.8 is ignored.*	No
1.9		Automatic Zero Setting	**ON** – Automatic Zero Setting is ON **OFF** – Automatic Zero Setting is OFF. *Note: Automatic Zero Setting is illegal in North America (USA and Canada)*	No
1.10		Language (only use with text display.)	TBD	Yes
1.11		Currency (only used with text display.)	TBD	No
Group 2			**Press Zero to Enter Group 2** **Press Tare to go to Group 3**	
Group.Step		**Function**	**Possible Selections**	**User Mode Access**
2.1		Calibration	**NO** – Do not enter 2.1 **YES** – Enter 2.1.	No
Only if 2.1 = YES	2.1.1	Build Selection	0 – 15 kg Single-Interval 1 – 6/15 kg Dual Interval 2 – 30 lb Single Interval 3 – 15/30 lb Dual Interval *4 – 3/6 kg Dual Interval (Ariva-S only)* *5 - 15 lb. Single Interval (Ariva-S only)* *6 - 6/15 lb. Dual Interval (Ariva-S only)* *7 – 240 Single Interval (Ariva-S only)*	No
	2.1.2	Enter Calibration	**NO** – Do not enter scale calibration. **YES** - Enter scale calibration now.	No

2.2		Digital Filter Selection	0 – Very fast // Use in very stable environments. 1 – Fast 2 – Reliable + fast // Default 3 – Reliable 4 – Very Reliable // Use in unstable environments. *<u>Note</u>:use this to adjust a scale to local performance considerations, such as a location with wind or vibrations.*	No
2.3		Expanded Weight Display	**ON** – Weight is displayed in high resolution (ten times normal resolution). **OFF** – Weight is displayed in normal display increments. *<u>Notes</u>:* 1. *No weighing transactions can occur in this mode.* 2. POS protocols are not operational *in this mode*. 3. *Press >T< key to exit Expanded Weight Mode.*	No
Group 3			**Press Zero to Enter Group 3** **Press Tare to go to Group 4**	
3.1		Communication Type	0 – RS-232 1 – USB Virtual COM ports (USB Ser/CDC) 2 – USB MTSerial HID (USB Ser/HID) ~~3 – USB HID POS~~ ~~4 – USB IBM OEM HID~~	Yes
Only if 3.1 = 0 or 1.	3.2	Baud rate	0 – 1200 1 – 2400 2 – 4800 3 – 9600 4 – 19,200 5 – 38,400 6 – 57,600 7 – 115,200	Yes
	3.3	Parity	**0** – None **1** – Even **2** – Odd	Yes
	3.4	Data bits	**0** – 7 data bit **1** – 8 data bit	Yes

	3.5	Stop bits	**0** – None **1** – 1 stop bit **2** – 2 stop bit	Yes
Only if 3.1 = 0, 1 or 2.	3.6	Protocol Selection	**0** = Disabled **1** = Reserved **2** = NCI Weightronix (WO/PC) **3** = 8217 Mettler-Toledo (WO) **4** = 8213 Mettler-Toledo (WO) **5** = EPOS 1 (WO) **6** = EPOS 2 (WO) **7** = SL4700/ TEC MA **8** = Dialog 06 (PC) **9** = Dialog 04/02 (PC) **10** = Extended Dialog 06 (PC) **11** = ICL (WO) **12** = Shekel (WO) **13** = RIVA 5462/Nixdorf 2(WO) **14** = IP3 (PC) **15** = Reserved **16** = Reserved **17** = MT L2 **18** = Berkel WO **19** = Berkel PC **20** = Anker **21** = CAS (WO) **22** = Epelsa	Yes
Only if 3.6 = 1	3.7	Protocol Option	**0** – 4 byte **1** – 2 byte *Note: Only available on certain Ariva models when 3.6 = 1.*	Yes
	3.8	Force customer display present	0x30 = None 0x31 = Display Required (status only.) 0x32 = Display Required (suppress sending weight) *Note: Only available on certain Ariva models when 3.6 = 1.*	Yes
Group 4			**Press Zero to Enter** **Press Tare to go to Group 5**	
4.1		Button Tare Enable	**ON** – Enables tare button function. **OFF** – Disables tare button function. *Note: This function only applies to push button tares (it does not apply to preset tares.)*	Yes
4.2		Chain Tare Enable	**ON** – Enables multiple tares. **OFF** – Only one tare per transaction is allowed.	Yes

4.3	Auto-clear of Button Tare	**ON** – Tare is automatically cleared when weight is removed. **OFF** – Tare is not cleared when weight is removed. *Note: This function only applies to push button tares (it does not apply to preset tares.)*	Yes
4.4	PreSet Tares Require Stable Weight	**ON** – Preset tares require stable weight (Argentina) **OFF** – Preset tares do not require stable weight (rest of world) *Note: Only Argentina requires this item to be set = ON.*	Yes
Group 5		**Press Zero to Enter** **Press Tare to go to Group 6**	
Group.Step	**Function**	**Possible Selections**	**User Mode Access**
5.1	Beeper	**0 –** No beeper.* **1** – Scale beeps only when Keypad is pressed. **2** – Scale beeps only when data is sent to POS. **3** – Scale beeps with both POS data and keypad press. **Note: The calibration button always beeps.*	Yes
5.2	Blank Weight Enable	**ON** – Only display stable weight. - Display will be blank during weight settling time. **OFF** – Display weight all the time (even if unstable.) *Note: When disabled (OFF) the weight settling time will appear to be faster because the final weight will be displayed before it has been determined to be stable.*	Yes
5.3	Zero cursor	**ON** – Enable (display) zero cursor. **OFF** – Disable zero cursor. *Note: when the scale is at Center-of-Zero the ZERO display cursor will be illuminated, depending upon this option.*	Yes
5.4	Display Type	**0** – None **1** – 1 Line **2** – 4 Line **3** – Text Display *Note: If an auto-detected display is used then the detected display type will over-ride the menu setting.*	Yes
5.5	Reserved	Reserved	No

Group 6		**Press Zero to Enter** **Press Tare to go to EXIT**	
6.1	Firmware update	**YES** – Enter Flash Mode now. **NO** – Do not enter Flash Mode	No
EXIT		**Press Zero to Enter** **Press Tare to go to Group 1**	
SAVE	Save or abort setting	**SAVE** – save all settings and reboot. **ABORT** – abort all settings and return to weighing mode.	Yes

***** Used only on the 4 Line display
PC – Price Computing; **WO** – Weight Only

Country Defaults
Universal

Function		Germany	France	USA	Austria	Spain	Portugal	Belguim	Netherlands	England	Ireland	Italy	Poland
Group 1													
1.1	Country Code	dE	Fr	US	AT	ES	PL	bE	nL	Gb	Ir	IT	PO
1.2	Initialize to Defaults	No	No	No	No	No	No	No	No	No	No	No	No
1.3	GEO Code	20	19	15	18	15	15	21	21	21	22	17	21
1.4	Decimal display	Off (,)	Off (,)	On (.)	Off (,)	Off (,)	Off (,)	Off (,)	Off (,)	Off (,)	Off (,)	Off (,)	Off (,)
1.5	Decimal Position	2	2	2	2	2	2	2	2	2	2	2	2
1.6	Total Price Round	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
1.7	Return to Zero Required	No	No	No	No	No	No	No	No	No	No	No	No
1.8	Weight Change	10	10	10	10	10	10	10	10	10	10	10	10
1.9	Automatic Zero Setting	On	On	Off	On	On	On	On	On	On	On	On	On
1.10	Language (text display)	0	0	0	0	0	0	0	0	0	0	0	0
1.11	Currency (text display)	0	0	0	0	0	0	0	0	0	0	0	0
Group 2													
2.1	Calibration	No	No	No	No	No	No	No	No	No	No	No	No
	2.1.1 - Build Selection	Dl Kg (1)	Dl Kg (1)	Sl Lb (2)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)	Dl Kg (1)
	2.1.2 - Enter Calibration	No	No	No	No	No	No	No	No	No	No	No	No
2.2	Digital Filter Selection	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)
2.3	Expanded Weight Display	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Group 3													
3.1	Communication Type	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)
3.2	Baud Rate	3 (9.6kb)	3 (9.6kb)	5 (38.4kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)
3.3	Parity	2(odd)	2(odd)	0(none)	2(odd)	1(even)	1(even)	2(odd)	2(odd)	2(odd)	2(odd)	2(odd)	1(even)
3.4	Data Bits	0 (7bits)	0 (7bits)	1 (8bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)
3.5	Stop Bit	1	1	1	1	1	1	1	1	1	1	1	1
3.6	Protocol	8 (Dialog06)	8 (Dialog06)	1 (NCI)	8 (Dialog06)	1 (NCI)	1 (NCI)	8 (Dialog06)	8 (Dialog06)	8 (Dialog06)	8 (Dialog06)	8 (Dialog06)	1 (NCI)
3.7	Protocol Option (Reserved)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)
3.8	Force cust. display present	0	0	0	0	0	0	0	0	0	0	0	0
Group 4													
4.1	Tare Enable	On	On	On	On	On	On	On	On	On	On	On	On
4.2	Chain Tare Enable	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
4.3	Auto Clear Tare	On	On	On	On	On	On	On	On	On	On	On	On
4.4	PreSet Tares Req Stable Wt	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Group 5													
5.1	Beeper	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)
5.2	Blank Weight Enable	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
5.3	Zero Cursor	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	Off	Off
5.4	Display Type	2 (4Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)
5.5	Reserved	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Group 6													
6.1	Firmware Update	No	No	No	No	No	No	No	No	No	No	No	No

Function		Swiss	Ukraine	Russia	Kazakhstan	Hungary	Slovakia	Czech	Croatia	Slovenia	China	Canada	Argentina	General Export (Default)
Group 1														
1.1	Country Code	CH	UA	rU	I-2	HU	SI	C2	Cr	SL	Cn	CA	Ar	dEF
1.2	Initalize to Defaults	No	No	No	No	No	No	No	No	No	No	No	No	No
1.3	GEO Code	18	21	23	18	19	19	20	18	18	12	15	13	12
1.4	Decimal display	Off (,)	Off (,)	Off (,)	On (.)	On (.)	Off (,)	Off (,)	Off (,)	Off (,)	On (.)	On (.)	On (.)	On (.)
1.5	Decimal Position	2	2	2	0	0	2	1	2	2	2	2	2	2
1.6	Total Price Round	On	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
1.7	Return to Zero Required	No	No	No	No	No	No	No	No	No	No	No	No	No
1.8	Weight Change	10	10	10	10	10	10	10	10	10	10	10	10	10
1.9	Automatic Zero Setting	On	On	On	On	On	On	On	On	On	On	Off	Off	On
1.10	Language (text display)	0	0	0	0	0	0	0	0	0	0	0	0	0
1.11	Currency (text display)	0	0	0	0	0	0	0	0	0	0	0	0	0
Group 2														
2.1	Calibration	No	No	No	No	No	No	No	No	No	No	No	No	No
	2.1.1 - Build Selection	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	DI Kg (1)	SI Kg (0)	SI Kg (0)	DI Kg (1)
	2.1.2 - Enter Calibration	No	No	No	No	No	No	No	No	No	No	No	No	No
2.2	Digital Filter Selection	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)	2 (Med)
2.3	Expanded Weight Display	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Group 3														
3.1	Communication Type	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)	0 (RS-232)
3.2	Baud Rate	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	3 (9.6kb)	5 (38.4 kb)	5 (38.4 kb)	3 (9.6kb)
3.3	Parity	2(odd)	1(even)	1(even)	1(even)	2(odd)	2(odd)	2(odd)	2(odd)	1(even)	1(even)	0 (none)	0 (none)	1(even)
3.4	Data Bits	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	0 (7bits)	1 (8bits)	1 (8bits)	0 (7bits)
3.5	Stop Bit	1	1	1	1	1	1	1	1	1	1	1	1	1
3.6	Protocol	8 (Dialog06)	1 (NCI)	1 (NCI)	1 (NCI)	8 (Dialog06)	8 (Dialog06)	8 (Dialog06)	8 (Dialog06)	1 (NCI)	1 (NCI)	1 (NCI)	3 (8217)	1 (NCI)
3.7	Protocol Option (Reserved)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)	0 (4 byte)
3.8	Force cust. display present	0	0	0	0	0	0	0	0	0	0	0	0	0
Group 4														
4.1	Tare Enable	On	On	On	On	On	On	On	On	On	On	On	On	On
4.2	Chain Tare Enable	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
4.3	Auto Clear Tare	On	On	On	On	On	On	On	On	On	On	On	On	On
4.4	PreSet Tares Req Stable Wt	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	On	Off
Group 5														
5.1	Beeper	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)	1 (keypad)
5.2	Blank Weight Enable	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
5.3	Zero Cursor	Off	Off	Off	On	On	Off	Off	Off	Off	On	On	On	On
5.4	Display Type	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)	1 (1Line)
5.5	Reserved	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Group 6														
6.1	Firmware Update	No	No	No	No	No	No	No	No	No	No	No	No	No

Geo Values

The GEO-Value of verified scales explains for which location of use the scale has been verified. This GEO-Value is shown on the weight display shortly after power is applied to the scale.

GeoCal® Country Codes

Country	Geo-Value
Argentina	13
Austria	18
Belgium	21
Bulgaria	16
Croatia	18
Czechia	20
Denmark	23
Estonia	24
Finland	25* 26
France	17 19*
Germany	20
Greece	15
Hungary	19
Ireland	22
Iceland	26
Italy	17
Kazakhstan	18
Latvia	23
Luxemburg	20
Liechtenstein	18

Country	Geo-Value
Lithuania	22
Netherlands	21
Norway	24* 26
Poland	21
Portugal	15
Romania	18
Russia	23
Sweden	24* 26
Switzerland	18
Slovakia	19
Slovenia	18
Spain	15
Turkey	16
United Kingdom	21* 23
Ukraine	21

GeoCal® USA State Location Codes

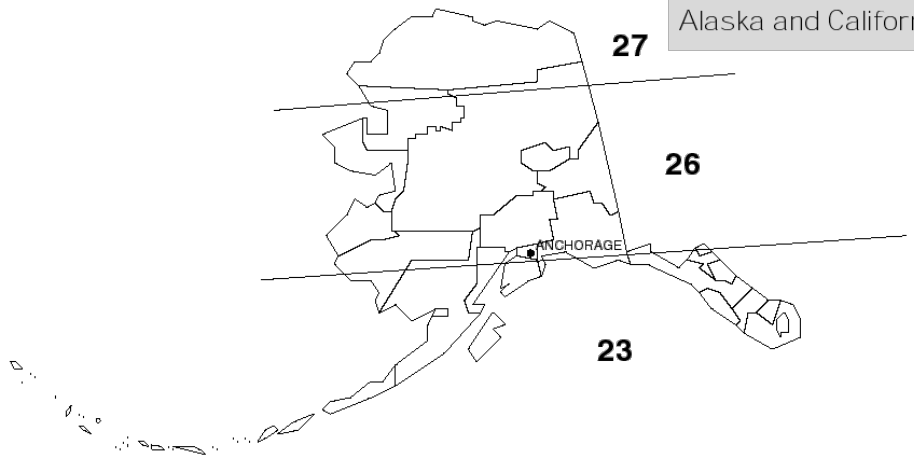
State	Code
Alabama Birmingham & North South of Birmingham	 13 12
Alaska	See map
Arizona Phoenix & North South of Phoenix	 12 11
Arkansas	13
California	See map
Colorado Denver & North South of Denver	 13 12
Connecticut	16
Delaware	15
Florida West Palm Beach & North South of West Palm Beach	 11 10
Georgia	12
Hawaii	9
Idaho North of Salmon River Mtns South of Salmon River Mtns	 17 16
Illinois Bloomington & North South of Bloomington	 16 15
Indiana North of Indianapolis Indianapolis & South	 16 15
Iowa North of Des Moines Des Moines & South	 17 16

State	Code
Kansas	14
Kentucky	14
Louisiana	12
Maine	18
Maryland	15
Massachusetts	17
Michigan Northwest of Lake Southeast of Lake	 18 17
Minnesota	18
Mississippi Kosciusko & North South of Kosciusko	 13 12
Missouri North of Springfield Springfield & South	 15 14
Montana Helena & North South of Helena	 18 17
Nebraska	15
Nevada	13
New Hampshire	17
New Jersey	16
New Mexico	11
New York Albany & North South of Albany	 17 16
North Carolina Raleigh & North South of Raleigh	 14 13

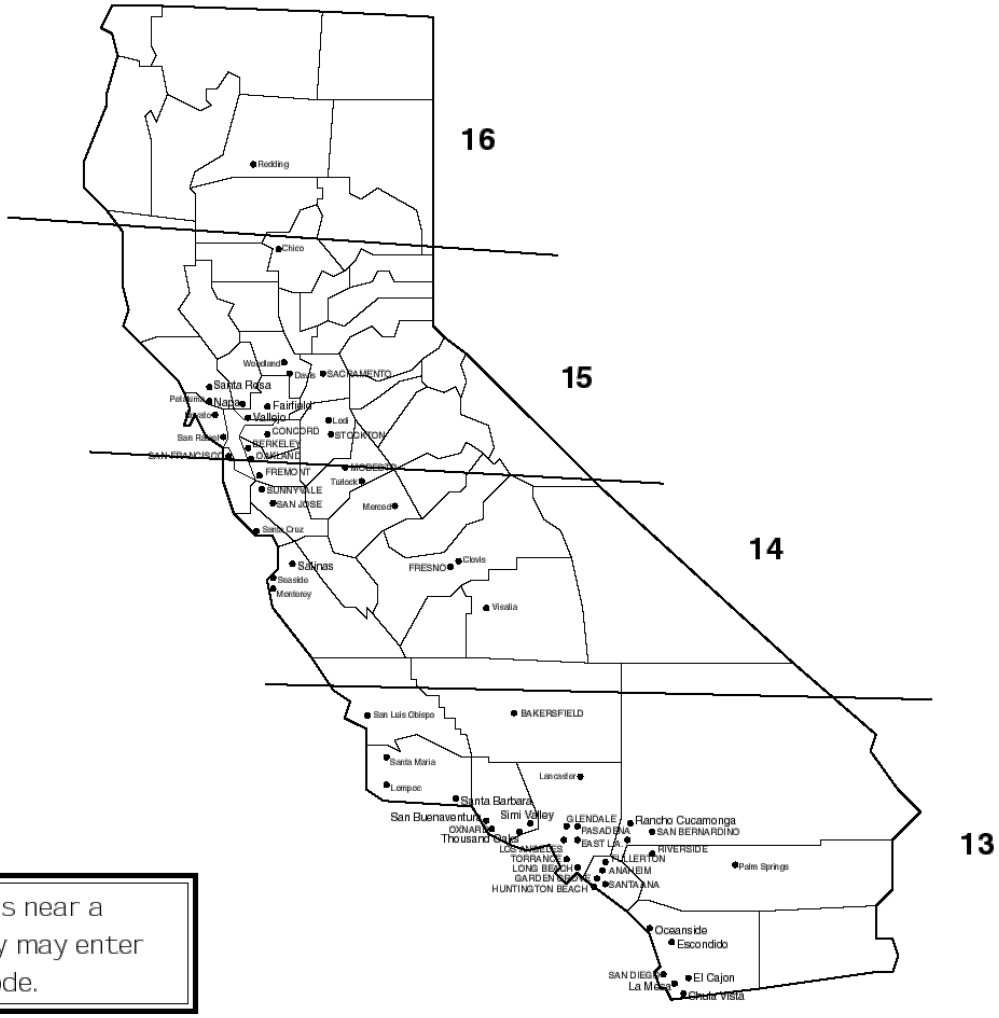
State	Code
North Dakota	18
Ohio Akron & North South of Akron	 16 15
Oklahoma	13
Oregon Salem & North Between Oakridge & Salem South of Oakridge	 18 17 16
Pennsylvania	16
Rhode Island	16
South Carolina	13
South Dakota	17
Tennessee	13
Texas Northeast of Colorado River Southwest of Colorado River	 12 11
Utah	13
Vermont	17
Virginia	14
Washington, DC	15
Washington State	18
West Virginia	15
Wisconsin Green Bay & North South of Green Bay	 18 17
Wyoming North of Casper Casper & South	 15 14

Alaska

Maps provided for residents of Alaska and California only.



California



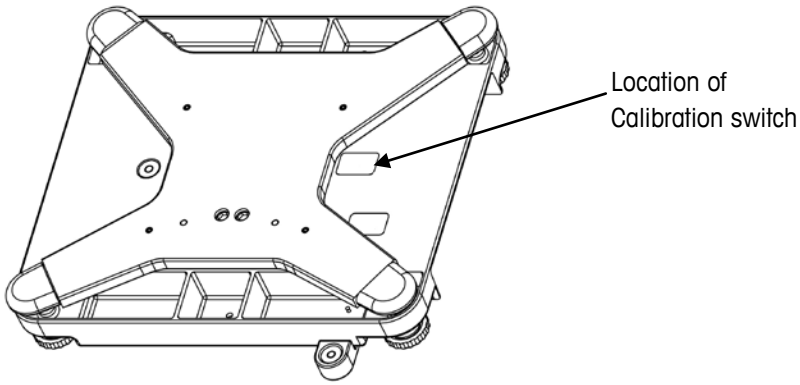
Locations near a boundary may enter either code.

Calibration

Note: These functions are directly related to the Weight & Measurement regulations in your country, therefore they are protected by a sealed calibration button. The button is located as shown below. For the scale to be usable in a legal for trade application, the button must be sealed as is shown in section 2 after the calibration is complete.

To calibrate the scale, follow this sequence:

Ariva-S



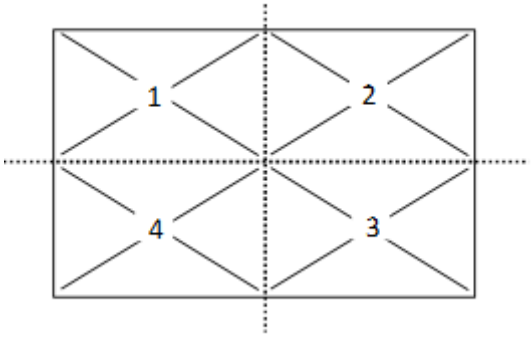
Note: Before calibrating the scale, be sure that the scale has been placed in an area free from air currents or excessive vibration. The platter should also be clean from any debris and ready for use. Check to make sure the scale has been leveled properly.

1. Press the calibration button as is shown in the beginning of this section.
2. Display will show "CONF".
3. Go to Group 2 Step 1 of the Service Mode (WO scale will show "2 NO" on the display).
4. Press the Tare key to change the prompt to "Yes".
5. Press the Zero key to accept.
6. The display will show the current build. Use the soft switch setup table entry 2.1.1 to determine the desired build. Use the Tare key to select the build number and the Zero button to accept.
7. The display will show "CAL NO". Use the Tare and Zero buttons to select and accept "CAL YES".
8. Clear the platter and Press the Zero key to accept the Zero Reading.
9. The display will now show "FULL CAP"
10. Place Full capacity onto the scale (30 lbs., 15 kg, 6 kg, 15 lbs., or 240 Oz (15 lbs.))
11. Press the Zero key to accept.
12. The display will now show "NO LOAD".
13. Remove all weights. Press the Zero key to take the final reading.
    Note: If the scale is unable to complete calibration it will display "E 20". Cycle power to the scale and restart at Step 1 above.
14. The scale will now save the calibration and cycle out of the Service mode and return to normal weighing mode.
15. Verify the calibration was successful with the calibrated weight. If for some reason the calibration was not successful, restart at Step 1.
16. If applicable, you should remove power from the scale and apply the appropriate calibration seal.
17. Place the scale into service.

Calibration Quick Reference Chart
Break the calibration seal and press the Calibration button.
Select "Yes" in Group 2, select the appropriate build number (0-3), then enable calibration "Yes"
Empty the scale and take the no load reading.
Place Full Load on the scale and take the reading.
Save the settings and verify the calibration in normal weighing mode.

Shift Test

The shift test should be performed after calibration. Place test weights equal to 1/3 of scale capacity (for 15kg scale, use 5kg) on the scale platter at each test point 1-4 (as shown in the illustration below). The NIST H-44 acceptance tolerance is ±3g (for a 6/15kg dual interval scale) at any of the points 1-4. Each test point is in the approximate center of each quadrant.



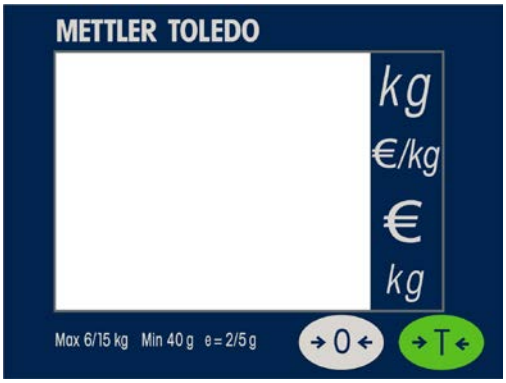
Shift test points

Notes

- If the scale fails the specified tolerance at one or more test points, check the overload-stop screws for proper adjustment and the top cover for proper seating and possible interference with sub-platter.
- The Spider and load cell spacer must be properly centered to avoid interference with top cover and load cell cover.
- If none of the above conditions exists, replace the load cell, recalibrate the scale, and recheck the shift.
- The test weight for the shift test is not to exceed 35% of the capacity.
- When 1/3 does not equal an even weight, the next closest full weight can be used. For example, on a 50 lb scale, 1/3 capacity is 16.5. In this instance, using 15 lb would be acceptable.

4 Operating Instructions

Displays



72190532

72190533

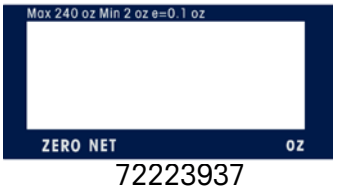
72187467

72187468

72188623

175704

30077118



72223937

30083957

175356

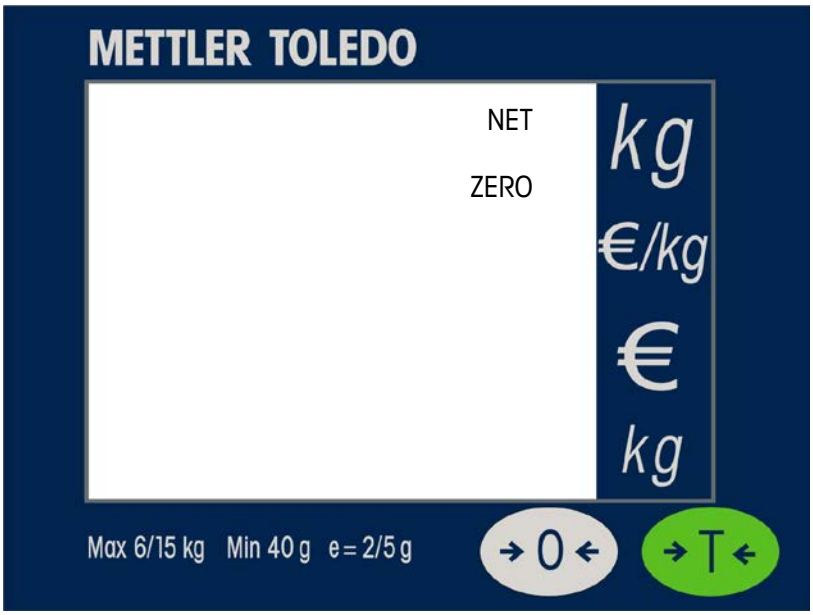
72190534

Keyboard

Key	Description
	Used to return the scale to gross zero.
	Tare key.

Cursors

Cursor	Description
NET	When tare is entered.
ZERO	When weight is gross zero.



Operations

Weighing and Communications

Place the item to be weighed on the platter. The weight will be displayed.

Remote ASCII commands can control the scale through the provided RS232 or USB ports. Commands include zero, tare, and other data functions depending on the protocol. See "Ariva Protocol Guide" (p/n: 30064448) for available protocols and their descriptions.

Backlight Function

The Ariva scale is equipped with a backlit display. To save energy, the scale will turn off the backlight when not in use for 60 seconds. The backlight will illuminate when the scale is back in use.

Re-zero Functions

There are two ways to re-zero the scale:

Power-up Zero

The scale will automatically capture zero when it is turned on. The power-up zero capture range is between -2% and +18% of the scale capacity. When the scale is turned on with a weight on the platter of more than +18% of capacity, the scale will not capture zero (the weight display will show "-----"). After removing the excess weight the scale will capture "zero" and be ready for use.

Likewise, if the scale is turned on without its platter, for example, the scale will be underweight and will not be able to capture zero.

Pushbutton Zero

The ZERO button re-zeros the scale over a range of +/-2% of the scale capacity. To use this function the scale must be in the gross weighing mode (NET cursor must be off) and stable. When the weight on the platter is more than +/-2% of the scale capacity, pressing the zero key will not be accepted.

Tare Function

The Tare button subtracts the weight of items like packaging or wrapping material.

1. Place an empty container or wrapping material on the platter.
2. Press the Tare key.
3. Place the item to be weighed in the container or on the wrapping material on the platter.

Note: A Tare command can also be sent from a POS through the serial connection. The tare method used to start a transaction must continue to be used until the transaction is completed. If the pushbutton tare is used first, for example, then a remote tare command cannot be used until the current transaction has been completed. Conversely, if a remote tare is used first, then the push button tare cannot be used until the current transaction has been completed.

METTLER TOLEDO

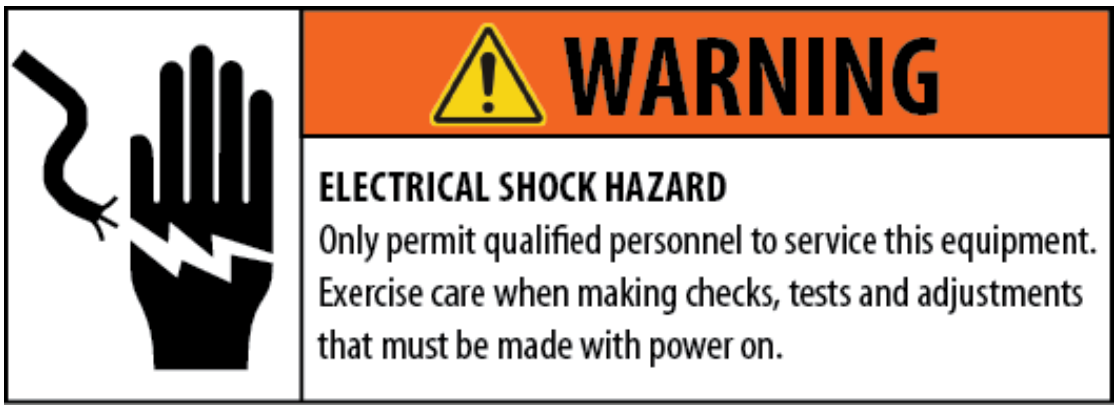
For your notes

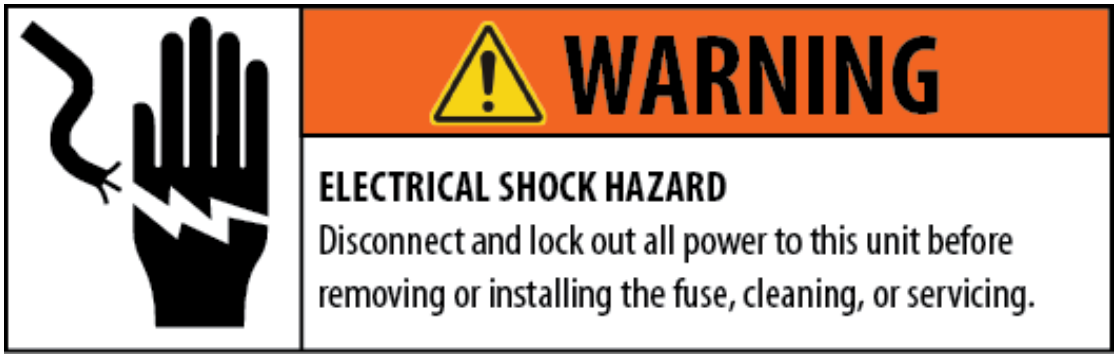
5 Service and Maintenance

Service and Maintenance

This chapter provides information on servicing and maintaining the scale including:

- Cleaning and regular maintenance
- Troubleshooting





Cleaning and Regular Maintenance

External Cleaning

Turn scale off by removing the wall transformer from the electrical outlet. Use a soft clean cloth dampened with water or a mild cleaner to wipe the exterior surfaces. Do not spray directly on the unit. A mild spray cleaner can be used by spraying the cleaning cloth. Do not use solvents or commercial cleaners on the unit as they may damage the display and platter finish.

Wipe the display area and weighing platter with a clean, soft cloth with water or a mild glass cleaner. Regular maintenance inspections by a qualified service technician are also recommended.

Internal Cleaning

Turn scale off by removing the wall transformer from the electrical outlet. Remove all dust/dirt build-up on scale.

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Troubleshooting

The following table lists error messages, descriptions, and corrective actions.

Error Codes and Actions

E 10 nn	System error	Cycle power to the scale. For continued problems call METTLER TOLEDO for replacement
E 12 nn	Data error	
E 18 nn	EEPROM error	
E 22 nn	Legal for trade error	
E 20 nn	Calibration error	Cycle power to the scale and restart calibration.
E 28 nn	Communication Error	Check scale communications parameters (via the menu) to insure they are the same as the POS system.
nnnnnn in weight display	Over capacity	Remove weight from Platter, if that does not work try cycling the power to the scale. For continued problems call METTLER TOLEDO for replacement.
nnnnnnn in total price display	Over 99999.99	Price too large for display.
uuuuuu in weight display	Under zero	Place the platter on the scale. Either press the Zero Key or cycle power to the scale. For continued problems call METTLER TOLEDO for replacement.

- The "nn" after each error code are two numbers used to uniquely identify an error. Please record this number and report this specific error to METTLER TOLEDO along with the general error.

Load Cell

If the weight readings on a recently calibrated Ariva scale are out of tolerance, the load cell needs to be replaced.

Make sure that nothing is touching the platter or spider and try to recalibrate the scale. If the scale will not calibrate, replace the load cell. Refer to 'Load Cell Replacement' section at the end of this chapter.

Connections to a POS

Communications Cable Pin Description

If a communications cable needs to be constructed, the following is the pinout on the RJ45 Connector directly on the scale.

Ariva- Connector Pin Descriptions and Positions
(when looking directly at the pins)

Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10
+12V DC	TxD (Out)	RxD (In)	Gnd	Zero	Center of Zero Status	USB +5V	USB Return	USB D+	USB D-

Communications Cables

The Ariva-S is directly connected to the POS for exchanging weight and price information.

1. RJ45 communications cable part numbers (use one of the following cables):
   - RS-232 POS communications cable (p/n: 72256235)
   - USB Type A communications cable (p/n: 72256236)
   - Powered USB communications cable.

Flash Updating the Software

Mettler-Toledo supports the eLoader tool for updating Ariva scales. eLoader runs on most Microsoft operating systems and uses RS-232.

eLoader can be obtained by contacting the local Mettler-Toledo service representative. Once obtained, place the eLoader.zip file in a separate directory along with the Ariva software .mot file that will be flash updated.

Configuring eLoader to update the scale.

Unzip the eLoader.zip file into a new folder. Note that an "Ariva.EL2" file is in this directory. This is the eLoader configuration file. There are two steps to setup eLoader for software updating the Ariva scale:

Copy the Ariva.mot software file into this folder. Typically this software file will be named something like the following: Ariva-X_*n.nnn*_mmddyyyy.mot

Edit the Ariva.EL2 file and make the following change:

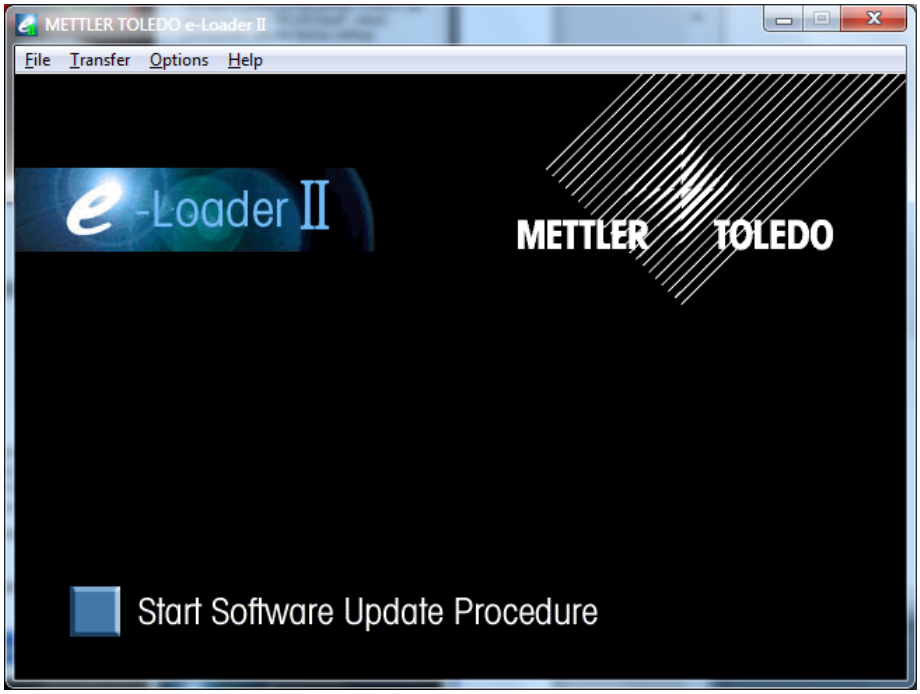
- Edit the final line in the Ariva.el2 file ("LOAD 0 0 Example.mot") and substitute the new software file name for "Example.mot".
  - I.e., "LOAD 0 0 Ariva-X_*n.nnn*_mmddyyyy.mot"
- Save this file.

Note that the *!ReadMe.txt* file also provides instructions on configuring the .EL2 file.

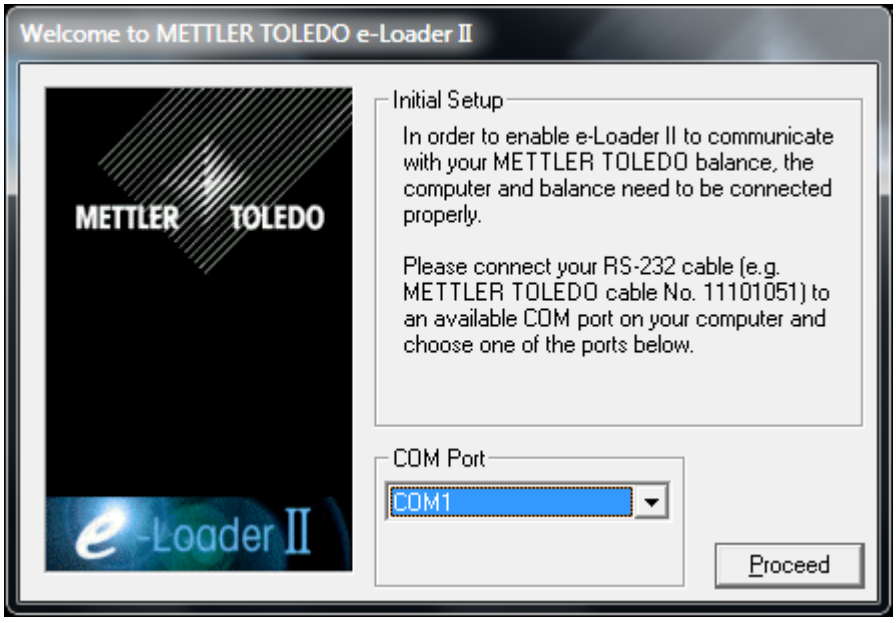
Usage

Execute the eLoader application by double-clicking on the *elo2.exe* file.

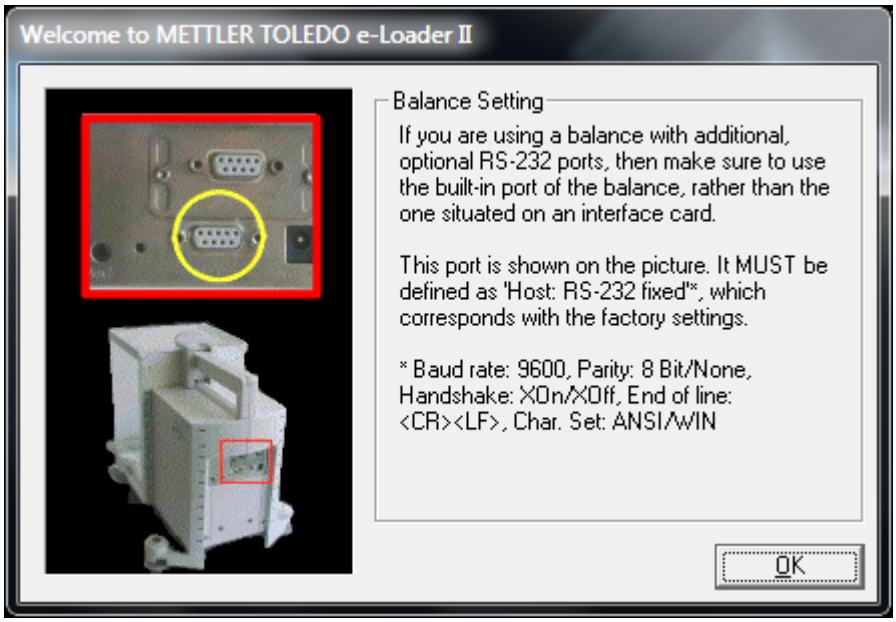
The following screen is overload with the "COM port" screen, below.



Select the appropriate COM port (on most PC's this will be COM1) and press "Proceed".



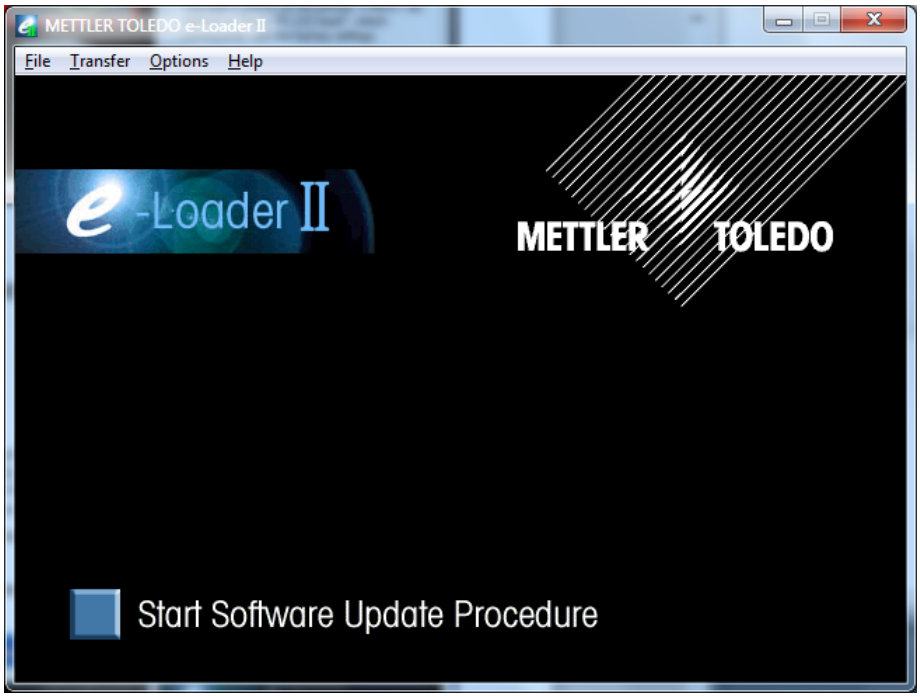
The following screen will appear.



Note that Ariva scales use a special RS-232 cable that has a DB-9 connector on one end and a RJ-45 connector on the other end. This is the same RS-232 cable that is used to connect Ariva scales to POS systems. Connect this cable to the scales "COM" port and to COM1 on your PC.

Since there is only one RS-232 port on an Ariva scale, press "OK".

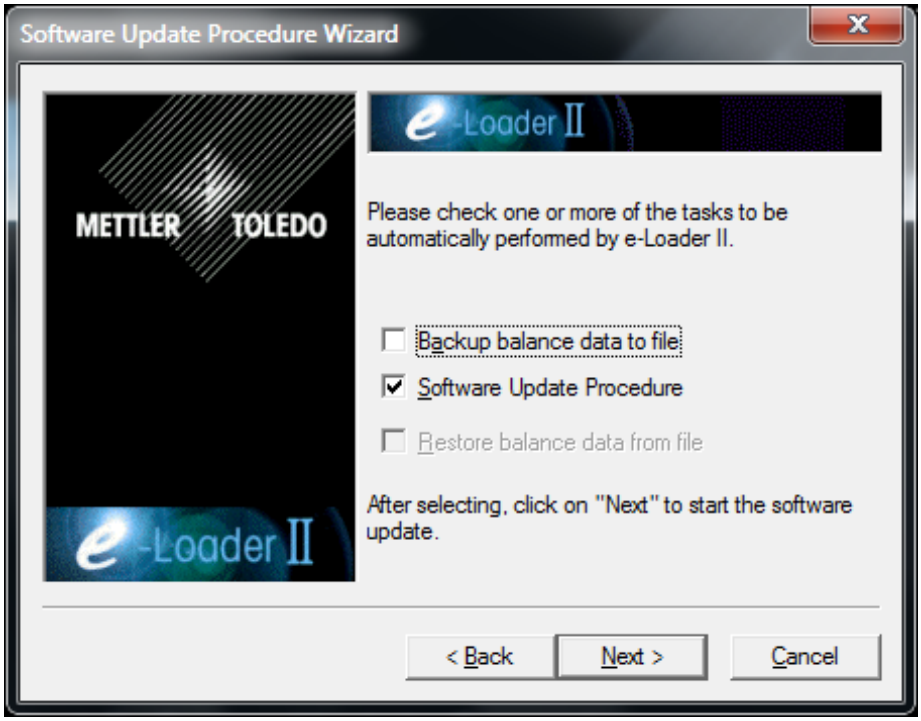
Next, select "Start Software Update Procedure.



The following screen is displayed.

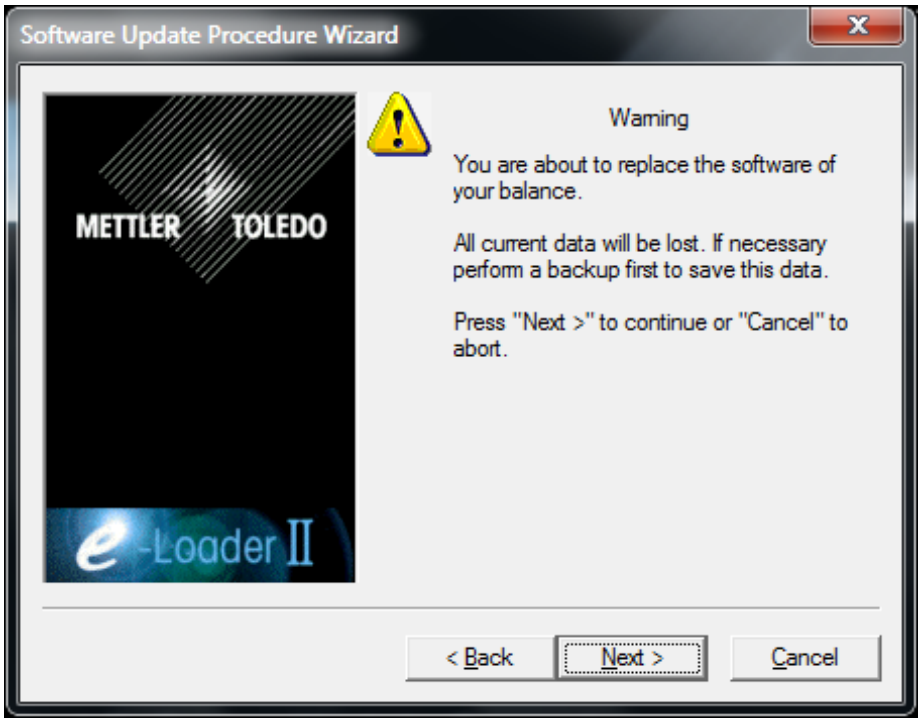
Select "Next".

Check the "Software Update Procedure" box and press "Next".



The following warning screen is displayed.

Press "Next".



Note that while the Ariva software will be updated, no Ariva application-level data will be lost. This means that any configuration data set-up on the Ariva scale (baud rates, country-specific parameters, etc.) will not be lost as a result of updating the software.

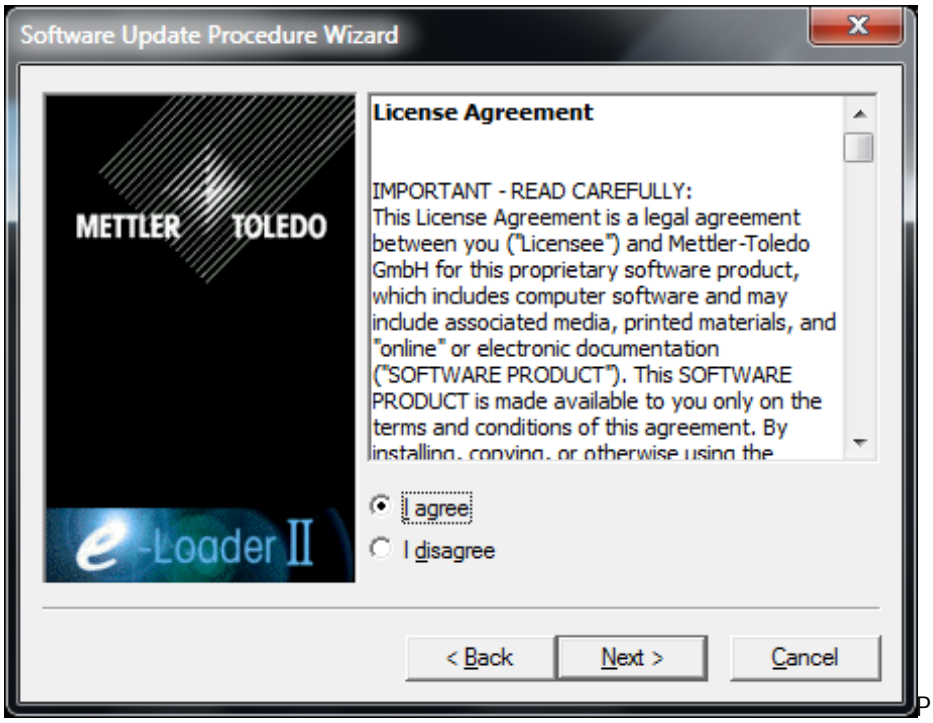
In addition, should the Ariva software update fail in the middle of its operation the software update procedure can be restarted. A failed software update may result in no software being active on the scale (and hence a non-functional scale), but since the Ariva scale has a separate boot loader the software update procedure can be restarted.

Carefully read the License Agreement.

Select "I agree".

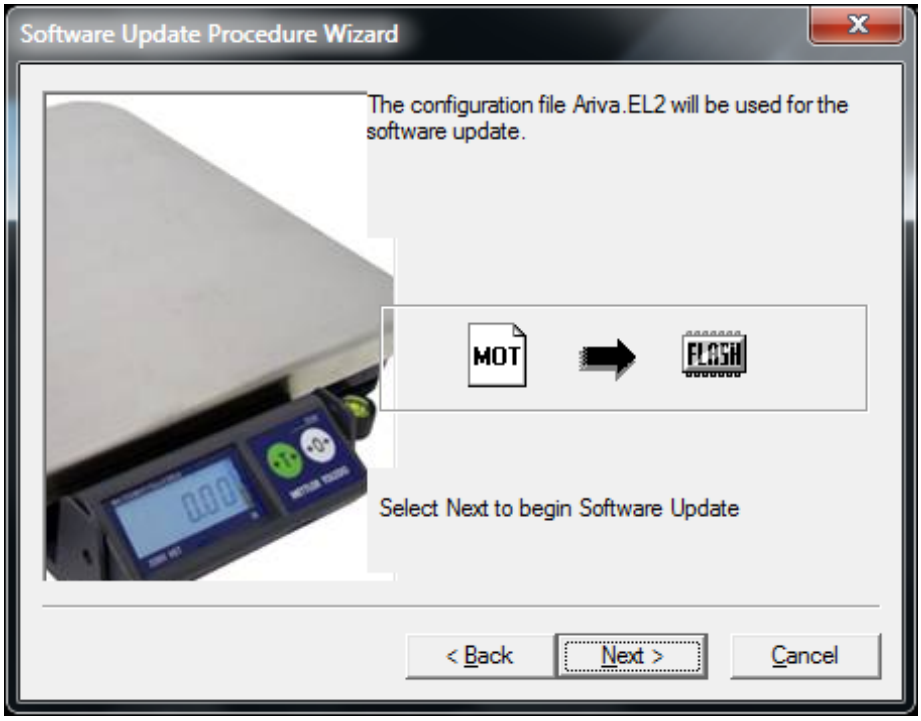
Press "Next".

Note that no customer or dealer-specific licensing is needed to run eLoader.

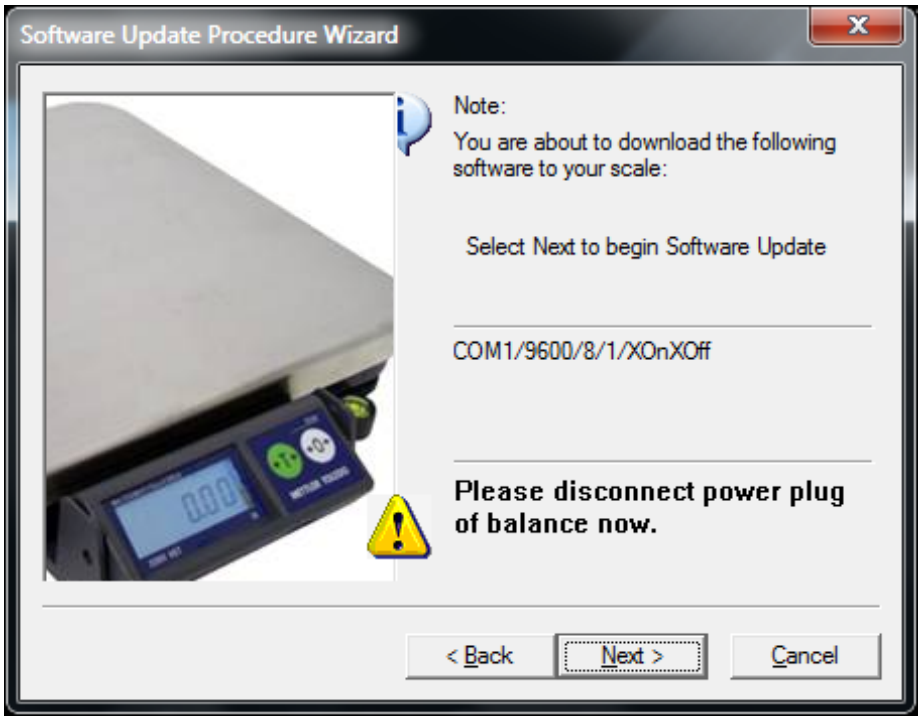


The following screen appears.

Press "Next".



The following screen appears.

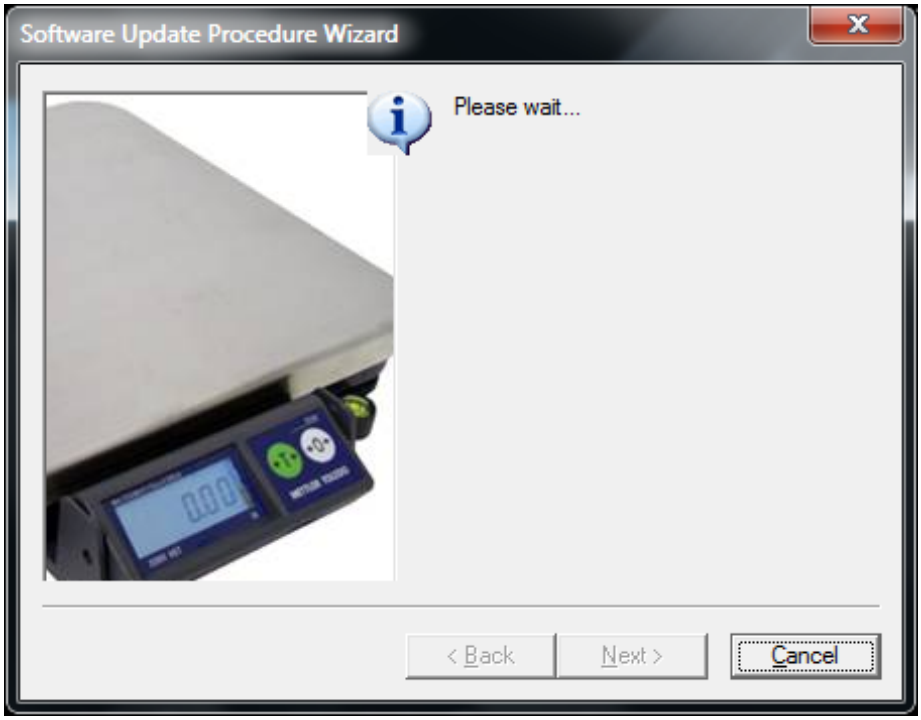


Note that the following command sequence is time sensitive. After disconnecting power to the scale and pressing "Next" there will only be 15 seconds to reconnect the scale. If the scale is not reconnect during this time the software update procedure must be restarted from the "Start Software Update Procedure" step.

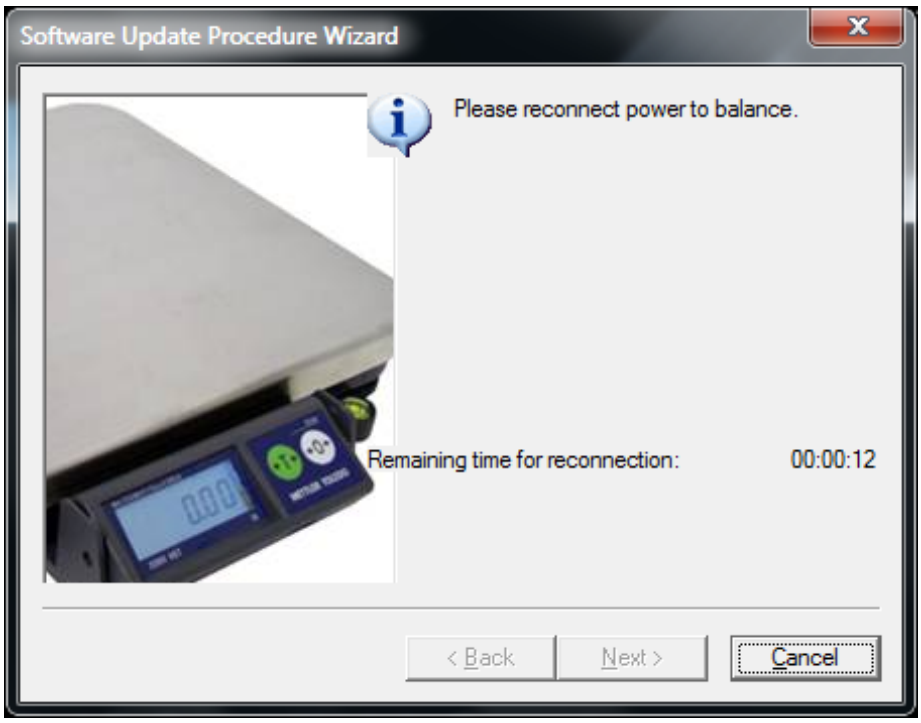
To activate the boot loader and begin the software update procedure it is necessary to disconnect power to the scale. Typically this involves turning off the scanner or disconnecting the Ariva scale directly from a wall outlet. Do this now.

Select "Next".

The following screen appears.

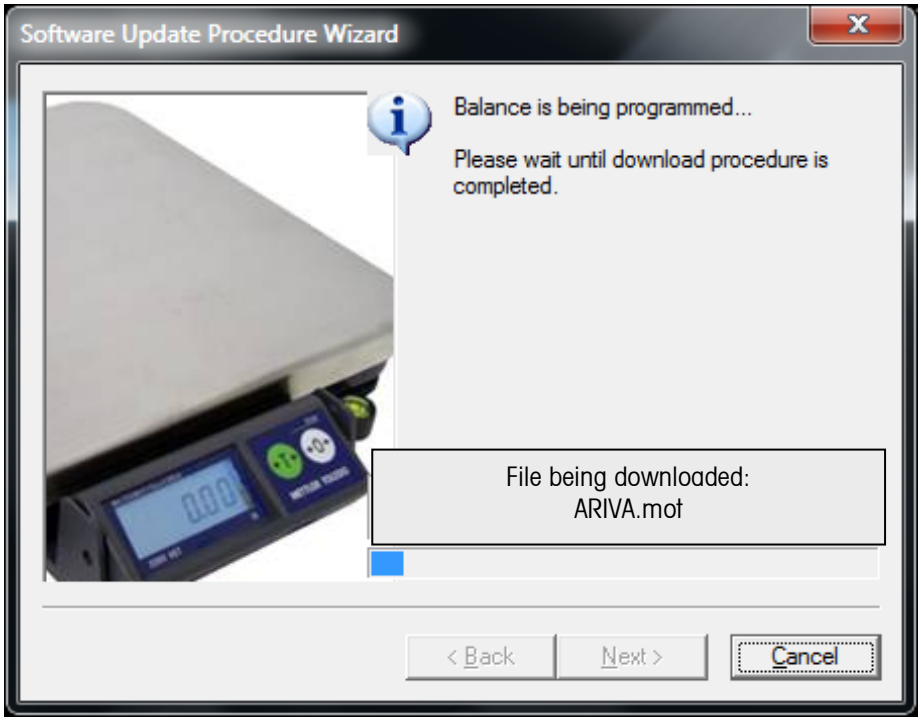


Then the following screen appears.



Reconnect the scale within 15 seconds. If the scale is not reconnected within 15 seconds, the software update procedure must be restarted from the "Start Software Update Procedure" step.

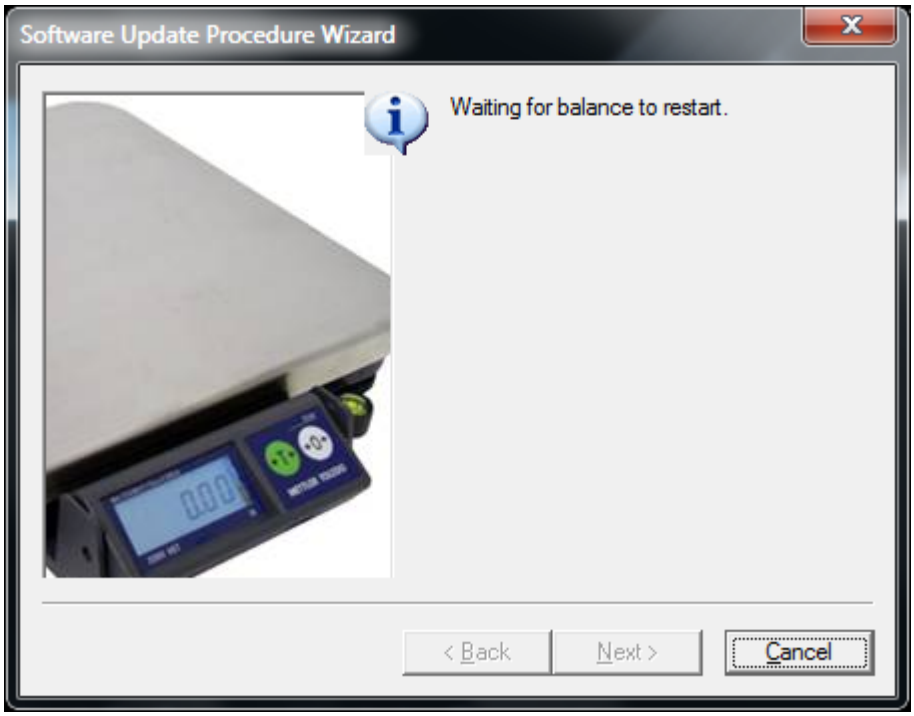
After reconnecting power to the scale the following screen appears.



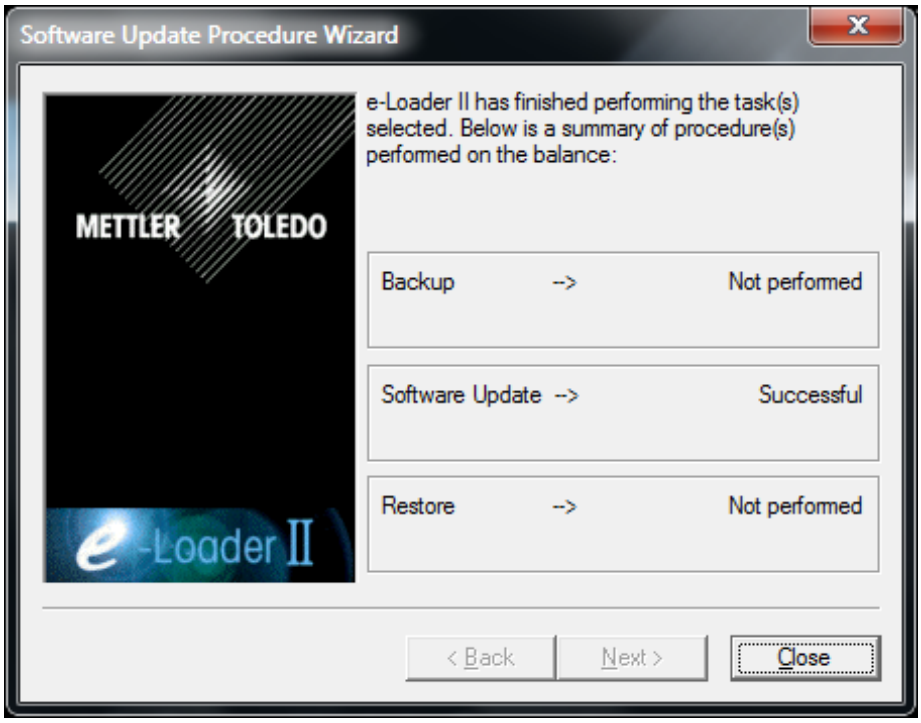
The software update procedure is now active. This operation can take several minutes.

When the software update has completed the scale will automatically reboot. Note that the new software version is displayed during initialization.

The scale will be automatically restarted and the following screen will appear.



Once the process is completed the following screen will appear, indicating success:

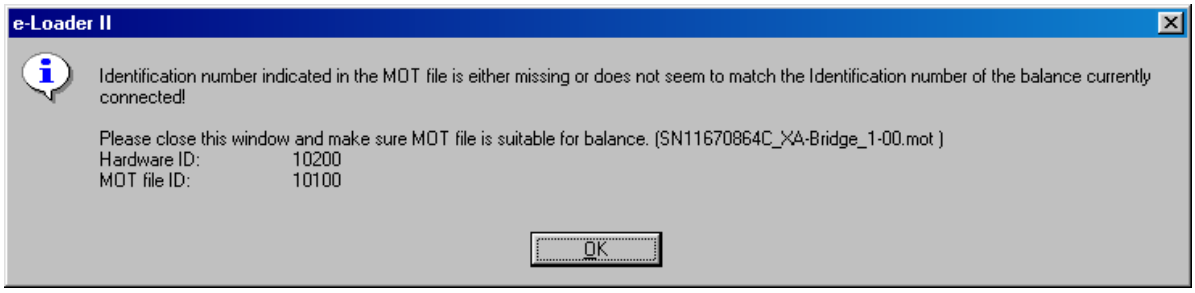


Select "Close" followed by the red "X".

This is the end of the software update procedure.

Error Conditions

If an error occurs then an error message like the following will appear.



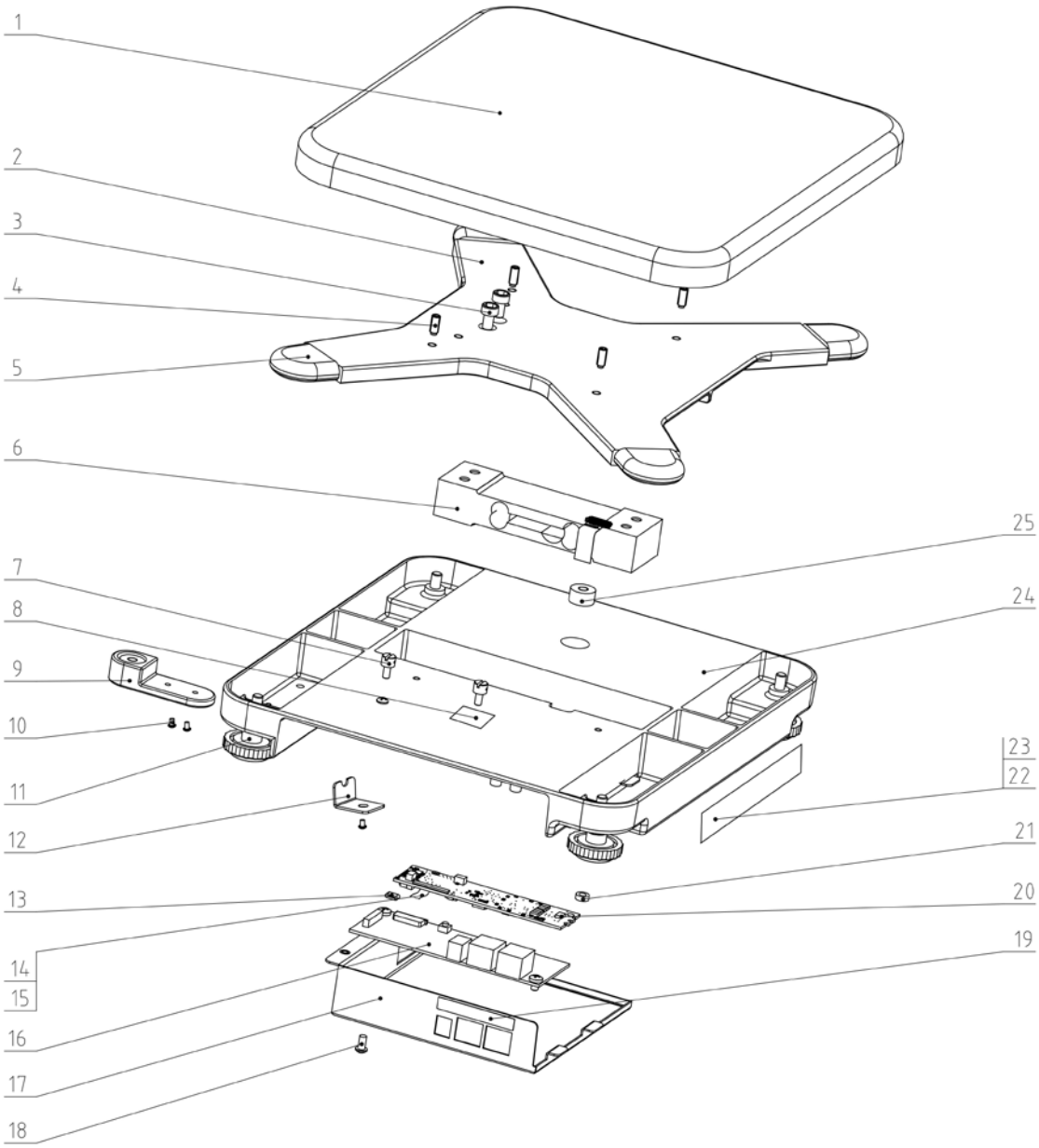
In these cases typically something is wrong with the Ariva.el2 configuration file. Please work to correct the problem. The ELO2.LOG file (located in the same directory where the eLoader was installed) will provide a software update transaction history and may help to debug any problems. If problems persist please contact the Mettler-Toledo service representative.

METTLER TOLEDO

For your notes

6 Parts and Accessories List

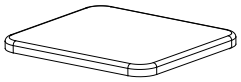
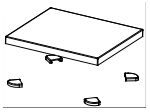
Exploded Diagram
(for illustration purposes only)

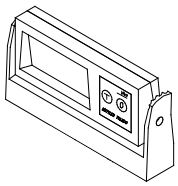
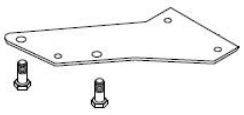


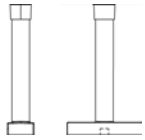
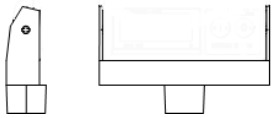
#	Part Number	Description	Qty
	175449	Platter square	1
1	156434	Platter round	1
2	154547	Spider	1
3	140976	Screw M5X2 GB77	4
4	102503	Screw M6X20 GB70	4
5	154555	Corner pad round	4
	170166	Corner pad square A	2
	170167	Corner pad square B	2
6	30208822	Load cell SLP330D#-30kg231-Ariva	1
7	118549	Screw M4x8 Seal	2
8	68001451	Label Seal	2
9	176018	Bubble Housing RN20	1
10	136868	SCR GB818 M3x12	2
11	72191799	Foot, ROHS, VIVA	4
	7289833	Foot, NYLOK, VIVA	4
12	154996	Fixing Plate	1
13	72996424	Ferrite Circuit	1
14	72256233	Harness CKOR 14 Conductor FFC	1
15	72256233	Harness CKOR 12 Conductor	1
16	30767798	PCBA Interfaceboard ARIVA-S	1
17	30058744	Bracket Interface ARIVA-S	1
18	133021	Screw M4x6 w/Locking Washer	5
19	30077151	Label Interface ARIVA-S	1
20	72996309	Foam Adhesive	1
21	72999690	Spacer Plastic 0.312 O.D. x 0.115	1
22	72995584	Data label	1
23	72196541	Pet film	1
24	30058745	Base ARIVA-S	1
25	176018	Bubble Housing RN20	1

*Not all parts are available for sale. See Parts and Accessories section.

Available Parts and Accessories

MT P/N	Description	Illustration
71207525	ARIVA-S Platter – Round Corner	
71208269	ARIVA-S In-Counter (Square) Platter Kit	
30099489	ARIVA-S Display Cable for Base Mount, 360mm	
71209948	ARIVA-S Display Cable for Tower Mount, 4m	
72191799	ARIVA-S Leveling foot	
72189833	ARIVA-S Leveling foot – Nylok NS version	
64066733	ARIVA-S Universal Power Supply	
72256235	ARIVA-S RS232 POS Communication Cable	
72256236	ARIVA-S USB Communication Cable	
30208822	ARIVA-S 15kg/30lb Load Cell Kit	
71208240	ARIVA-S Wall Mount Display Accessory (Price Computing Version Only)	

30111333	ARIVA-S Weight Only 240oz Tower 1-line	
30111335	ARIVA-S Weight Only 15kg Tower 1-line Display	
30111334	ARIVA-S Weight Only 3/6kg Tower 1-line Display	
30111336	ARIVA-S Weight Only 15 lb Tower 1-line Display	
30111818	ARIVA-S Weight Only 30 lb Tower 1-line Display	
30077118	ARIVA-S Weigh Only 1-line 3/6kg Overlay	
72188623	ARIVA-S Weigh Only 1-line 15/30 lbs Overlay	
72187468	ARIVA-S Weigh Only 1-line 30lbs Overlay	
72187467	ARIVA-S Weigh Only 1-line 6/15kg Overlay	
175704	ARIVA-S Weigh Only 1-line 15kg Overlay	
72223937	ARIVA-S Weigh Only 1-line 240oz Overlay	
30083957	ARIVA-S Weigh Only 1-line 6/15lbs Overlay	
175356	ARIVA-S Weigh Only 1-line 15lbs Overlay	
72200317	Weight Only Tower Display Mount Kit	

68002577	Weight Only Display Tower Base	
68002576	Weight Only Display Tower Mounting Bracket	
72201640	ARIVA-S Price Computing 6kg EURO Tower 4-line Display	
72201641	ARIVA-S Price Computing 15kg EURO Tower 4-line Display	

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