
CSN810 TABLETOP™

OPERATOR GUIDE



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Mettler-Toledo Cargoscan AS

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Reviewed By

Version	Department/Function	Reviewer Names
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1 INTRODUCTION

The CSN810 TableTop™ is an easy to use data capturing system. The system is designed to measure, weigh and identify rectangular objects. The system is run by CXS310 software.

The software runs on the measurement instrument CSN810. The software is used to capture weight, dimensions and bar codes of a package and forward these results to the customer's host system.

The CSN810 TableTop™ system has a VGA monitor to display the user interface and an optional display to show dimensions.

This document describes how to operate the dimensioning system.

2 TERMINOLOGY / REFERENCES

2.1 TERMINOLOGY

Terminology	Explanation
CSN810 TableTop™	Data capturing system
CSN810	METTLER TOLEDO Cargoscan dimensioner
CSX	METTLER TOLEDO Cargoscan software
CS2200LX	METTLER TOLEDO Cargoscan digital display
AWB	Package Identification Barcode

3 SYSTEM DESCRIPTION

The system consists of three major parts:

1. CSN810 dimensioner
2. Scale with an indicator
3. Barcode reader.

In addition there are two optional units:

4. VGA Display
5. CS2200LX Digital Display

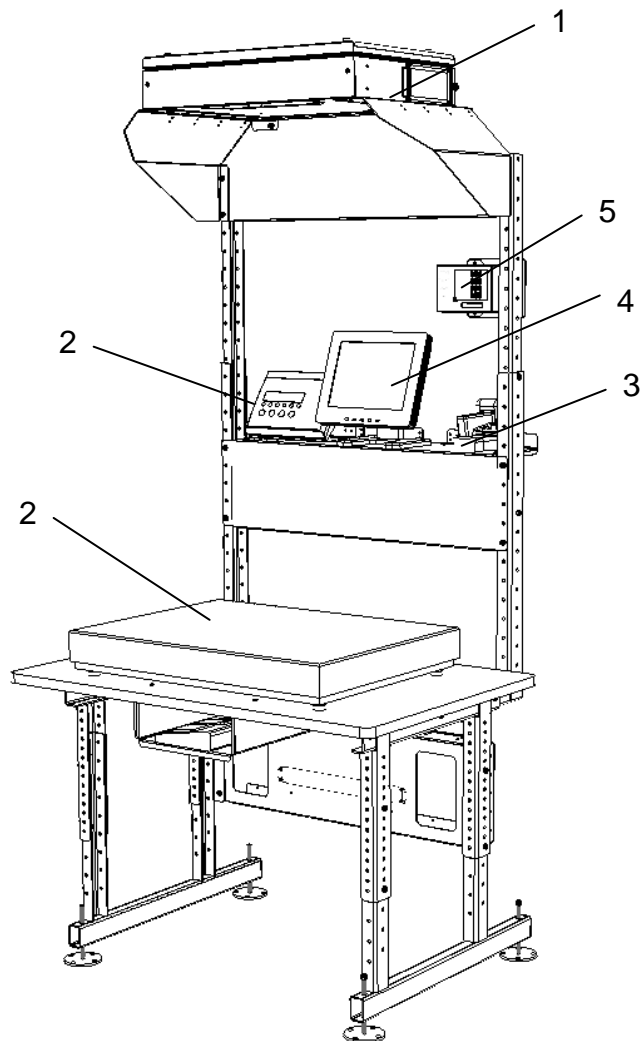


Figure 1 System components

4 STARTING THE CSN810 TABLETOP™

The system needs a certain starting procedure to work properly.
Start in the following order:

1. Turn on the CSN810 by turning on the switch on the dimensioner.
The dimensioner will need 30 seconds to start.

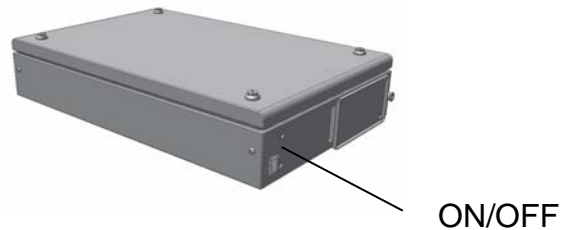


Figure 2 ON/OFF switch on CSN810

2. The Scale is 'ON' when it is connected to power.
Zero the scale by pushing the '0'-button on the display.
NOTE: This can differ depending on type of scale.
3. The Barcode reader is 'ON' when it is connected to power.
Note: The handheld barcode reader need to be kept in the cradle to keep the batteries charged.

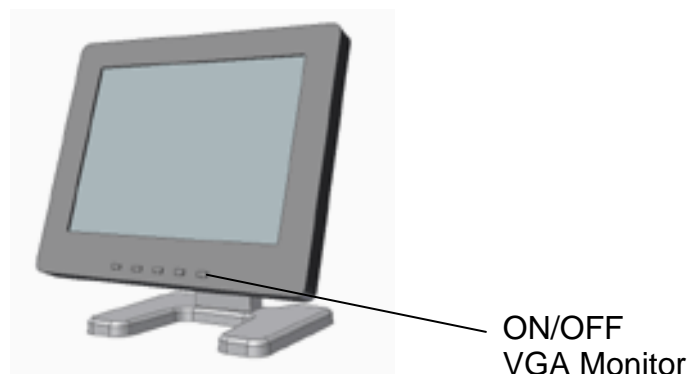


Figure 3 ON/OFF switch on monitor

4. The VGA Monitor main switch.

5 USER INTERFACE

5.1 CS2200LX DISPLAY

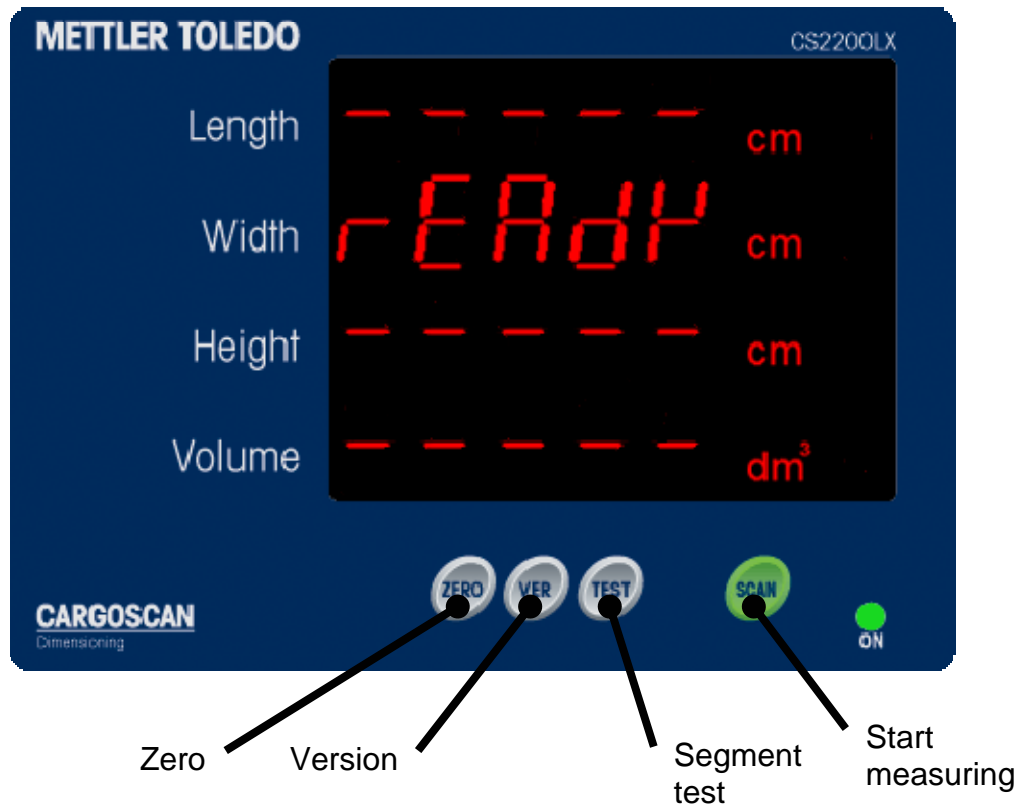


Figure 4 CS2200LX User Interface

5.2 VGA DISPLAY

The VGA display is a normal full size graphical display. The main screen includes four parts: **Statistics**, **List of packages**, **Command buttons** and **Current (package being registered)**:

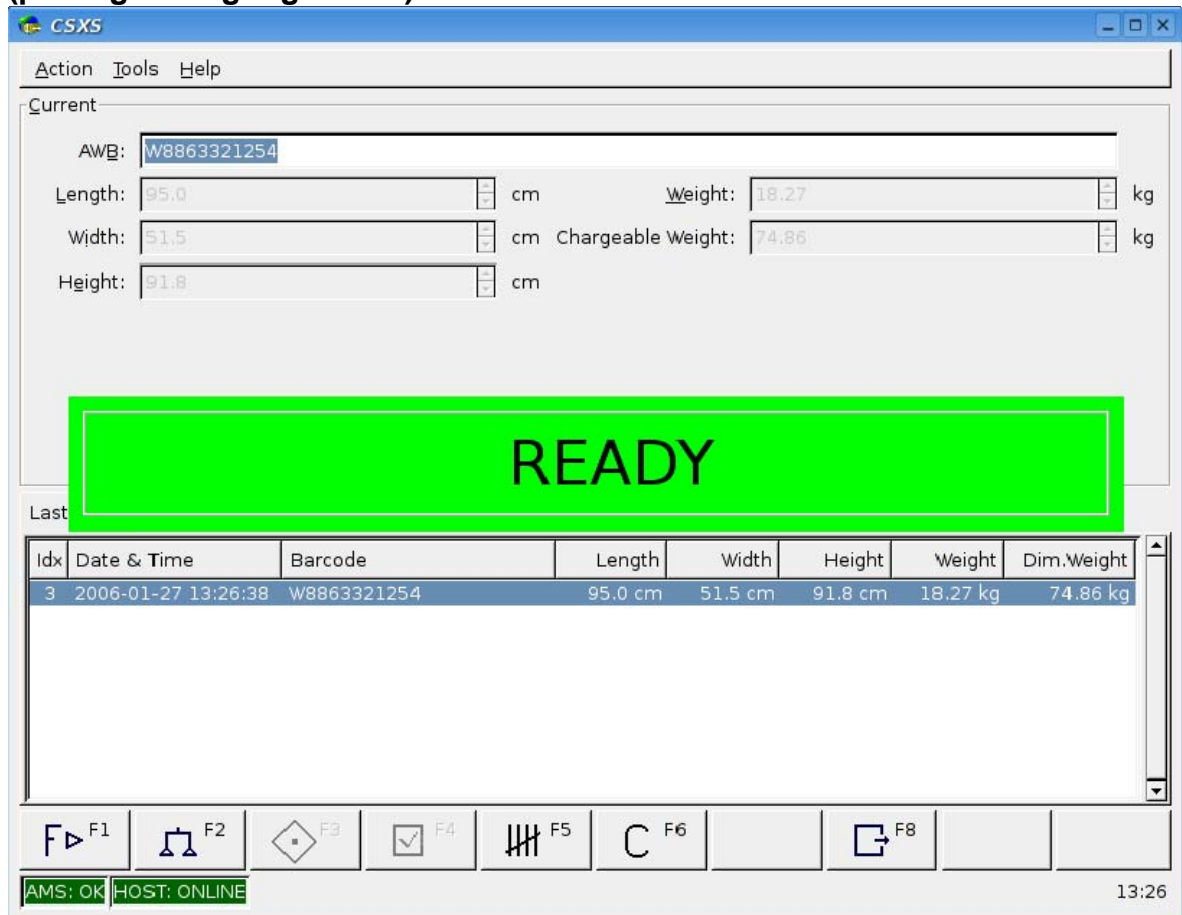


Figure 5 - CSX User Interface

Current shows the package being registered now.

Statistics section shows statistical counters and values.

List of packages section shows the last 50 measured packages.

Command buttons section is used to activate several functions either by clicking on the button or by pressing the corresponding F-key. The functions can also be activated by scanning the corresponding barcode.

5.2.1 Current

Current section shows the package being registered.

Value	Description
AWB:	The package shipment number or license plate
Length:	Measured or manually entered length
Width:	Measured or manually entered width
Height:	Measured or manually entered height
Weight:	Measured or manually entered weight
Payable weight	The maximum value of the weight and the volume divided with a configurable chargeable weight factor.

Possible error and warning messages are shown under the **Chargeable weight** field.

Current

AWB:

Length: cm Weight: kg

Width: cm Chargeable Weight: kg

Height: cm

Figure 6 – Current package values

5.2.2 Statistics

Statistics shows the summed number of packages measured:

Value	Description
# of packages:	Total number of packages measured since the last reset.
Since:	From when the statistics are counted
Next reset:	Next scheduled reset or empty if no scheduled reset
# of packages per hour:	Calculated number of packages per hour
# of packages per day:	Calculated number of packages per day

The screenshot shows a 'Statistics' window with the following data:

# of items:	3	# of items per hour:	75.5
Since: 2006-01-27 13:26:06		# of items per day:	1812.6
Next reset:			

Figure 7 – Statistics

5.2.3 Resetting statistical counters

Press **F1** and then **F5** to reset statistical counters. CSX software can be configured to reset statistical counters automatically after a given number of minutes of inactivity (no packages or bar codes detected).

5.2.4 List of packages

List of packages shows the last 50 measurement results.

Idx	Date & Time	Barcode	Length	Width	Height	Weight	Dim.Weight
3	2006-01-27 13:26:38	W8863321254	95.0 cm	51.5 cm	91.8 cm	18.27 kg	74.86 kg
4	2006-01-27 13:28:20	655646546	72.0 cm	14.5 cm	61.0 cm	31.80 kg	10.61 kg
5	2006-01-27 13:28:29	223665541	24.5 cm	14.0 cm	80.5 cm	0.86 kg	4.60 kg
6	2006-01-27 13:30:04	485523653	40.5 cm	13.5 cm	11.2 cm	7.88 kg	1.02 kg

Figure 8 - List of packages

The list contains the following information:





- One or more bar codes found on this package
- Package dimensions (length x width x height) or an error code if failed to measure
- Weight
- Volumetric weight

5.2.5 Command buttons






Command buttons are buttons on the bottom of the screen used to control the operation and run additional functions.

First row of command buttons:

Icon	Shortcut	Description
	F1	Opens the second row of command buttons
	F2	Start manual measurements

	F3	Cancel ongoing measurements
	F4	Not used
	F5	Show statistics
	F6	Reset information in Current section
	F7	Not used
	F8	Restarts the User Interface application

Second row of command buttons:

<i>Icon</i>	<i>Shortcut</i>	<i>Description</i>
	F1	Opens the messages window
	F2	Not used
	F3	Zero scale and CND810
	F4	Closes the second row of command buttons
	F5	Resets statistical counters
	F6	Starts CSX configuration
Info	F7	Shows information about CXS310
	F8	Not used

5.2.6 Status bar

Status bar shows additional information about the status of the system.

AMS: OK | HOST: ONLINE

10 00

First section indicates the status of CSX subsystems – AMS and CSM.

The second section indicates the host interface status – HOST DISABLED, HOST OFFLINE or HOST ONLINE.

The last section displays the current time.

6 MEASURING WITH THE CSN810 TABLETOP™

6.1 PLACING THE PACKAGE

1. CSN810 TableTop™ measures rectangular packages

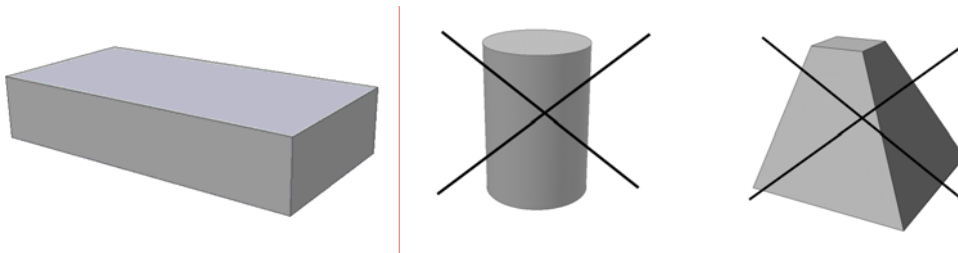


Figure 9 – Rectangular package

2. Place one package with the largest and most stable side down.

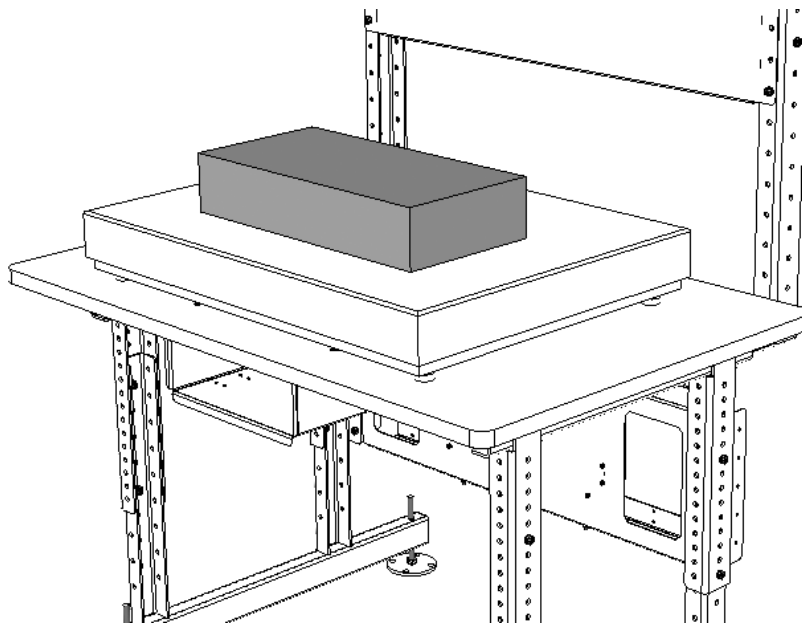
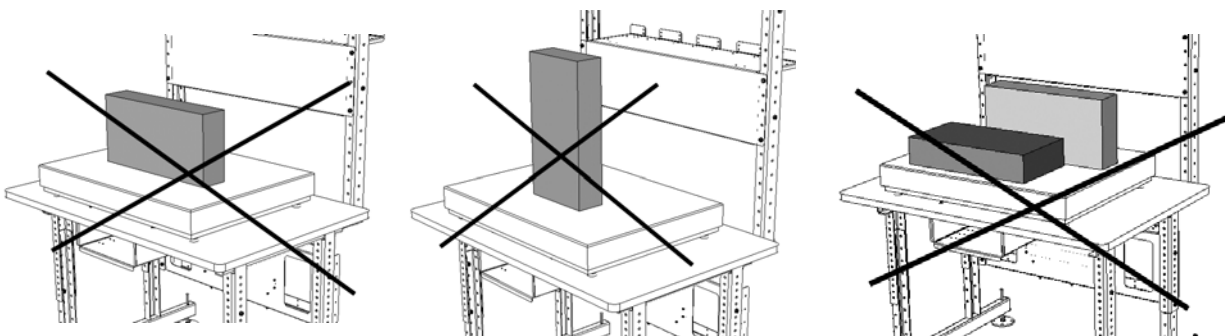


Figure 10 – Placing the package



3. Center the package approximately under the scanner window

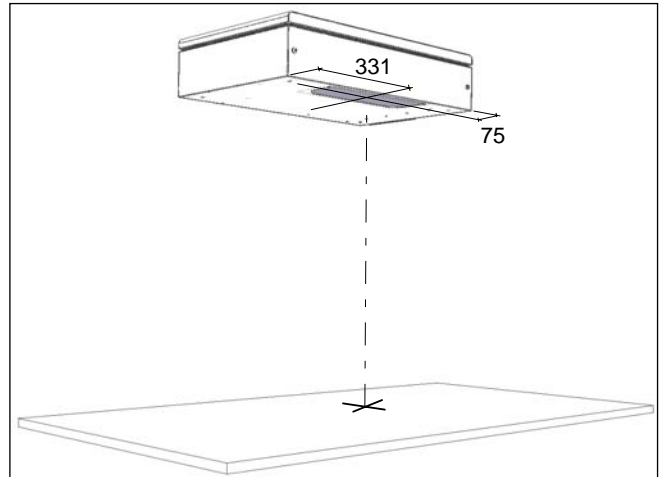


Figure 11 – Center the package

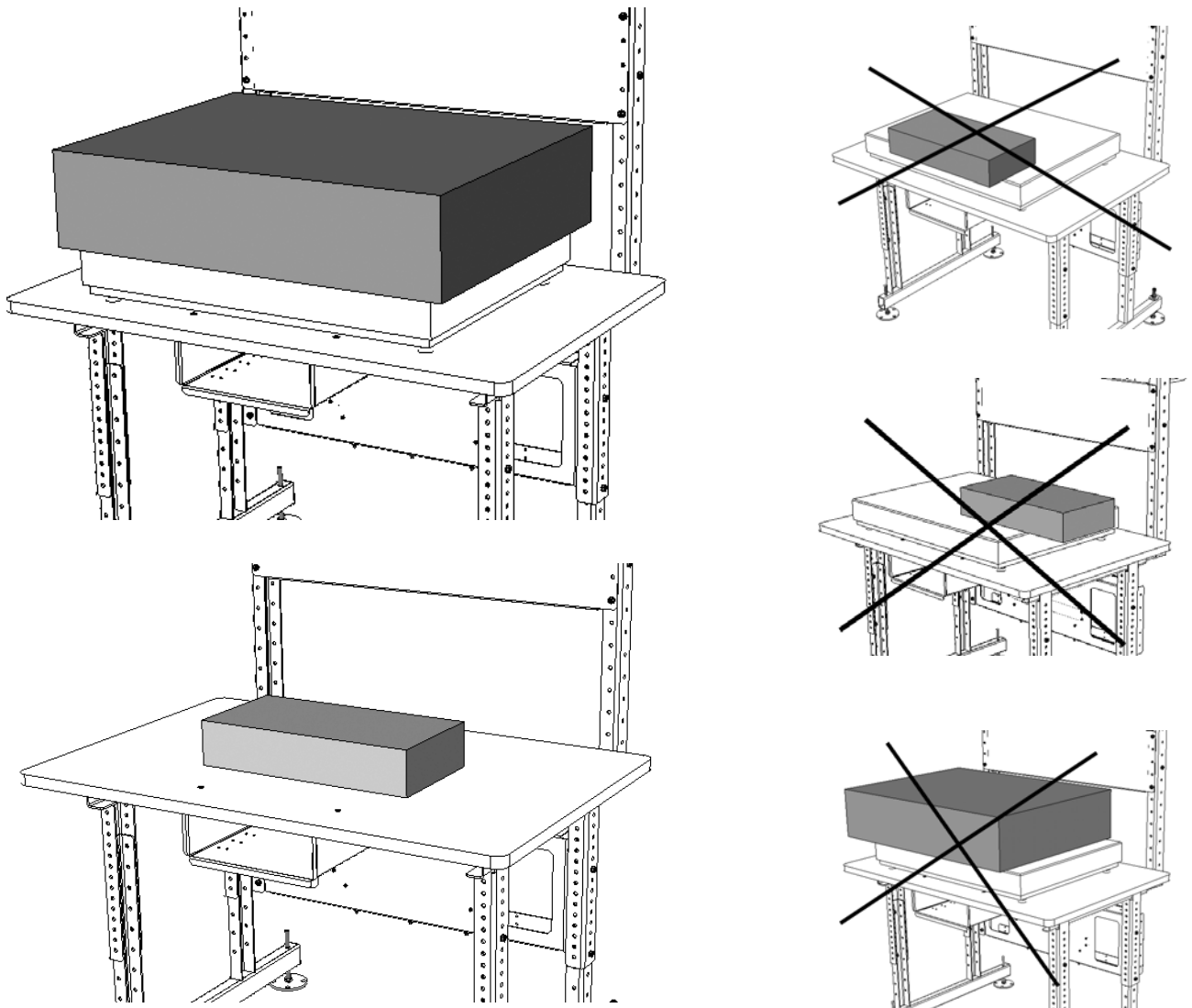


Figure 12: Correct placement of package

7 START TO MEASURE

The system has at least one display. The operating procedure will be dependent of what type of display is in use.

When the actual system has both types of display, the VGA display is to be used to operate the system.

7.1 START TO MEASURE USING CS2200LX DISPLAY AS INTERFACE

It is recommended that a certain starting procedure is followed. Start in the following order:

7.1.1 Turn on power

After start procedure which includes a segment test, the CS2200LX display will show "Ready":

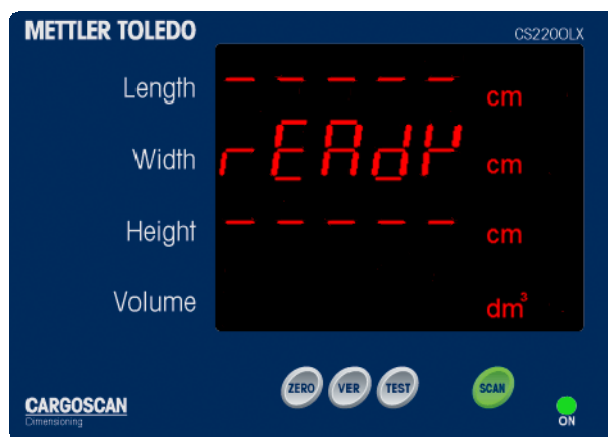


Figure 13: Message "Ready"

7.1.2 Zero the CSN810

Before each shift or at start-up, it is recommended that the CSN810 is zeroed.

- Make sure the CSN810 /scale/table is aligned correctly.
- Clear the scale/table.
- If the system is calibrated with a test box, use the same test box and place it in the middle of the measurement area, with the correct side down.
- Press "CAL" button on display to zero CSN810. During the "Zeroing procedure the CS2200LX shows "Calib"

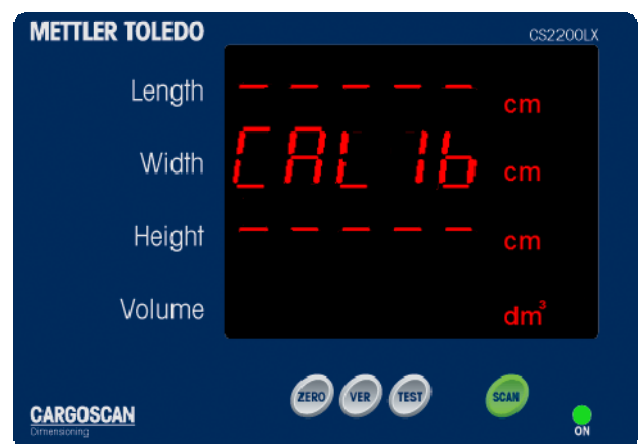


Figure 14 Message during Zero procedure

7.1.3 Zeroing ended with success

If Zero function is accepted and display shows “calib pass” then calibration/zeroing is ok. After a few seconds the display will go back to show “Ready”. The system is then ready to start measuring!

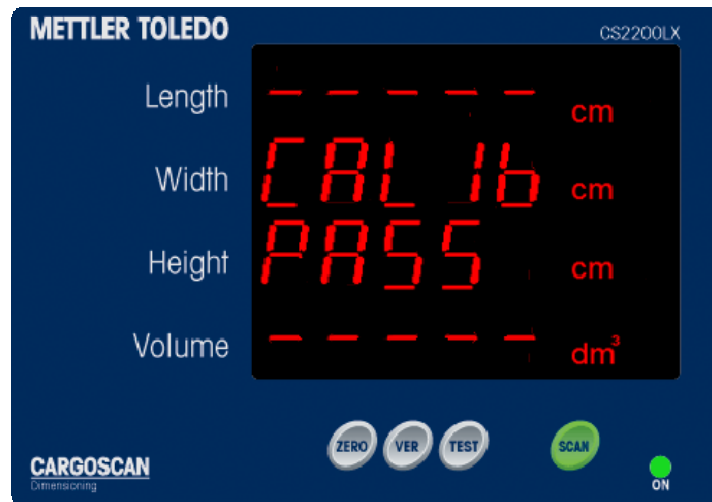


Figure 15: Message when calibration is OK

7.1.4 Zeroing ended with failure

If Calibrate function fails and display shows “calib fail” or “calib error” then calibration/zeroing were done but values were outside allowed limits for the device. The “error” message can also be triggered by anything from operator fault, system fault or any other unpredictable event.

Operator should try zeroing one more time. Check that the test box (if in use) is turned correctly.

If it fails again a new complete calibration through the web-page must be done. Calibrate according to “CSN810 Installation Manual”

NOTE: To continue measuring after a failing zero process may cause incorrect dimensions.

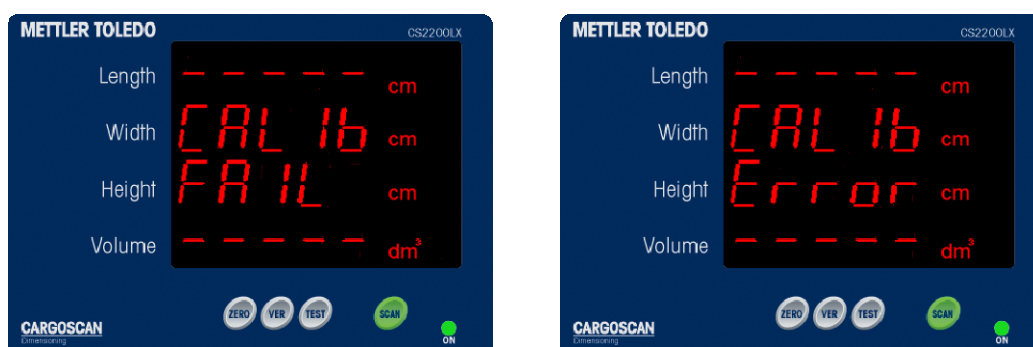


Figure 16 Message when calibration fails

7.1.5 Start to measure

Press “ENT” to start the measure process.
The display will show “scan” during the scan process.

Only the package to be measured must be in the field of view during measuring.
Step back and wait while measuring (about 2.5 seconds)

NOTE: Keep out of the measuring field while the dimensioner is working!

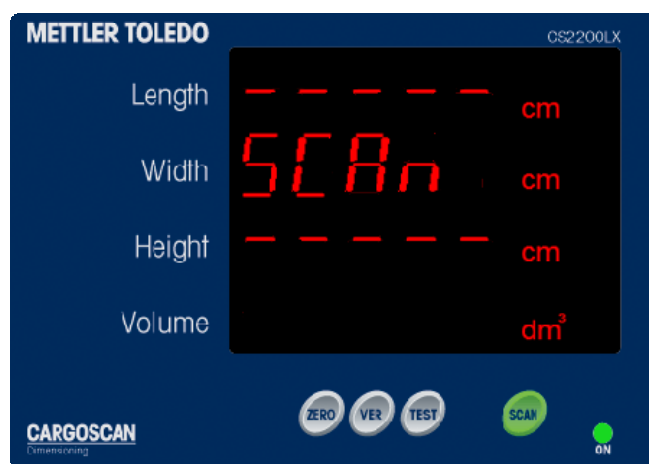


Figure 17: Message during scanning process

7.1.6 Measuring ended with success

If the measuring process ended with success the display will show the actual measures of the package:

The package may be removed and the system is ready for the next one.



Figure 18: Correct position of package

7.1.7 Status messages

Message	Description
none	The dimensioner cannot detect a package
n Obj	The scanner detects multiple packages

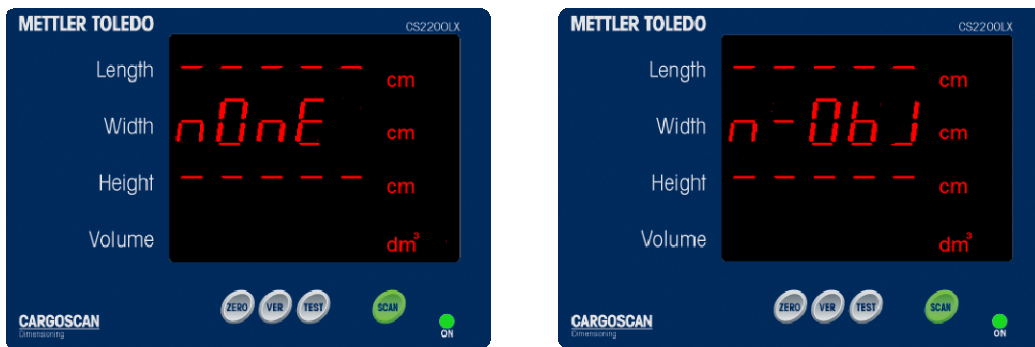


Figure 19: Status messages

7.1.8 Status Code Messages

When the dimension data has a status code that differs from accepted values, the code is displayed.

See chapter 5 for status codes.

Correct according to code and measure again.



Figure 20: Message with status code

7.1.9 Error code message

Error messages are caused by device or system error.
Contact supervisor when an “Error”-message occurs.

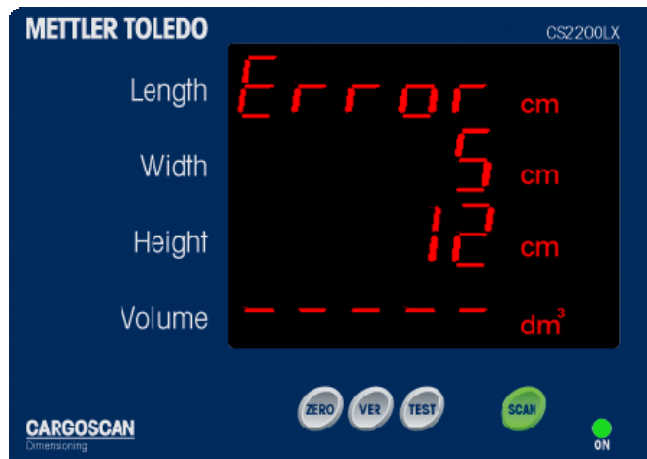


Figure 21: Version information

7.1.10 Version information

When “VER” key is pressed the software version numbers are displayed.
The first three lines of numbers indicate the Dim software version, in this case 1.5.7.

The last line indicates the version of the display software



Figure 22: Version information

7.1.11 Segment test

At power-up a segment test is performed, showing all segments row by row. A segment test can also be triggered by pressing the “TEST” button.

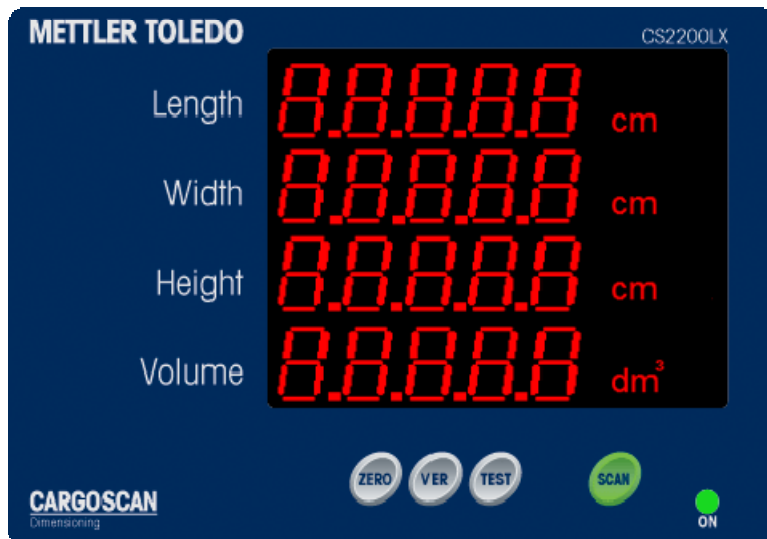


Figure 23: Segment test

7.2 START TO MEASURE USING THE VGA DISPLAY AS INTERFACE

1. Turn on power. The CSX Software will start automatically and the user interface will come up on the VGA Display
2. Make sure the CSN810 /scale/table is aligned correctly.
3. Clear the scale/table.
4. If the system is calibrated with a test box, use the same test box and place it in the middle of the measurement area, with the correct side down.
5. Zero the system by first pressing F1 and then F3

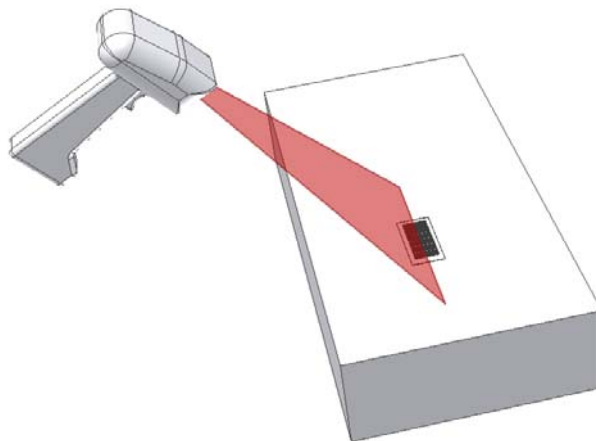


Figure 24 – Start measuring

6. When using a VGA Display the measuring sequence is started whenever the barcode reader sees a barcode that is validated by the CXS310 software. Then the scale and dimensions are captured. The captured data is shown on the Display.

If all measurements are Ok, all fields are grayed and will stay on the screen until the next barcode is read. However, the operator will see that the measurements have popped up in the Last 50 packages field.

If any measurement is wrong, the reason is shown underneath payable weight field.

See next chapters for further details.

7.2.1 Working with the software

CSX follows the same registration sequence for all types of packages.

- I. Measurement starts whenever a valid AWB (package ID) is entered. There are alternatives:
 - a. The operator identifies the AWB of the package with the barcode reader.
 - b. If the AWB of the package cannot be read with the barcode reader, the operator must enter the AWB manually.
While entering the AWB the field turns to red to indicate that the entered information so far is not correct. When the proper number of digits and checksum is entered the fields turn to white to indicate that the reading is correct. Then press the Enter key to start the measurements.

- II. Measurement is now started, by triggering the scale and the CSN810.

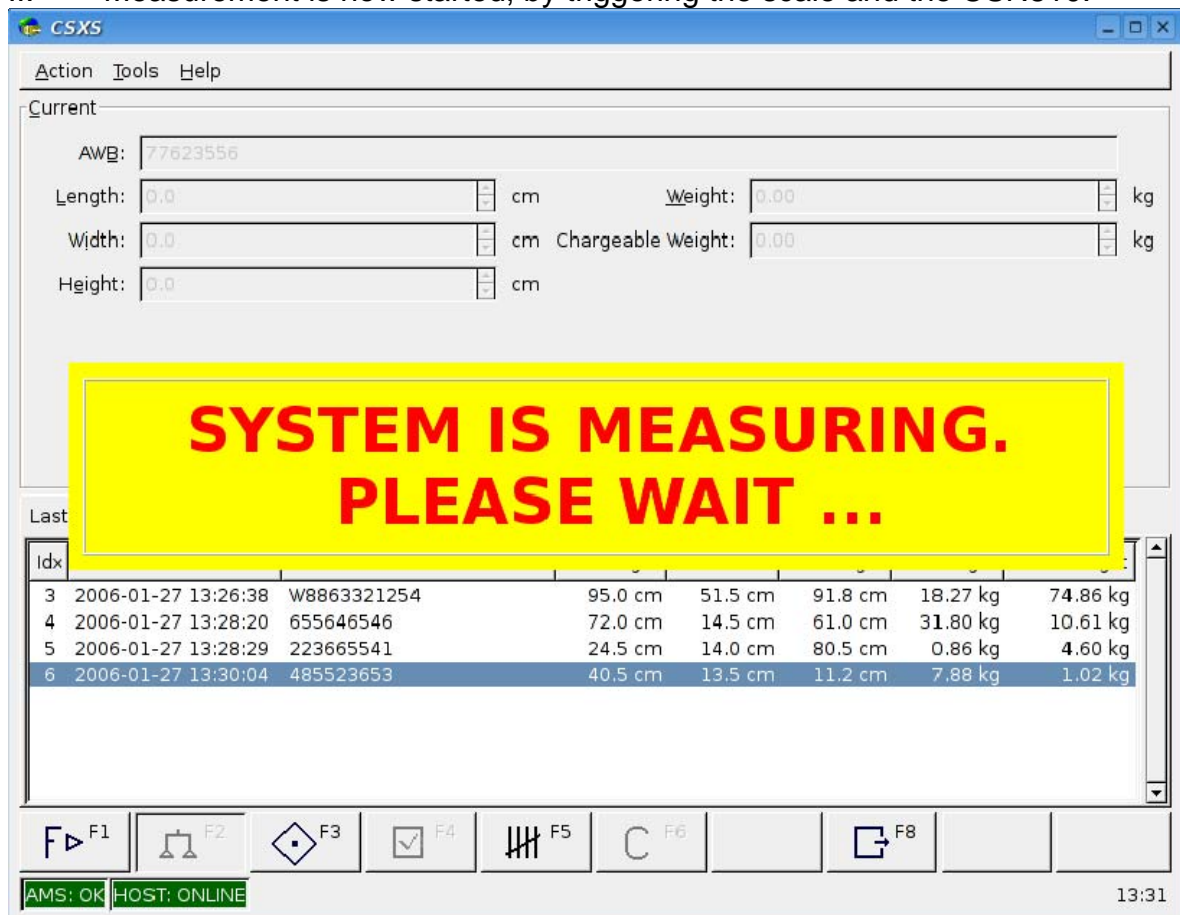


Figure 25 - CSX measuring

- III. Measurements are received. There are alternatives:

- a. If all measurements are Ok, all fields are greyed and will stay on the screen until the next AWB is read. However, the operator will see that the measurements have popped up in the Last 50 packages field.
- b. If any measurement is wrong, the reason is shown underneath chargeable weight field.

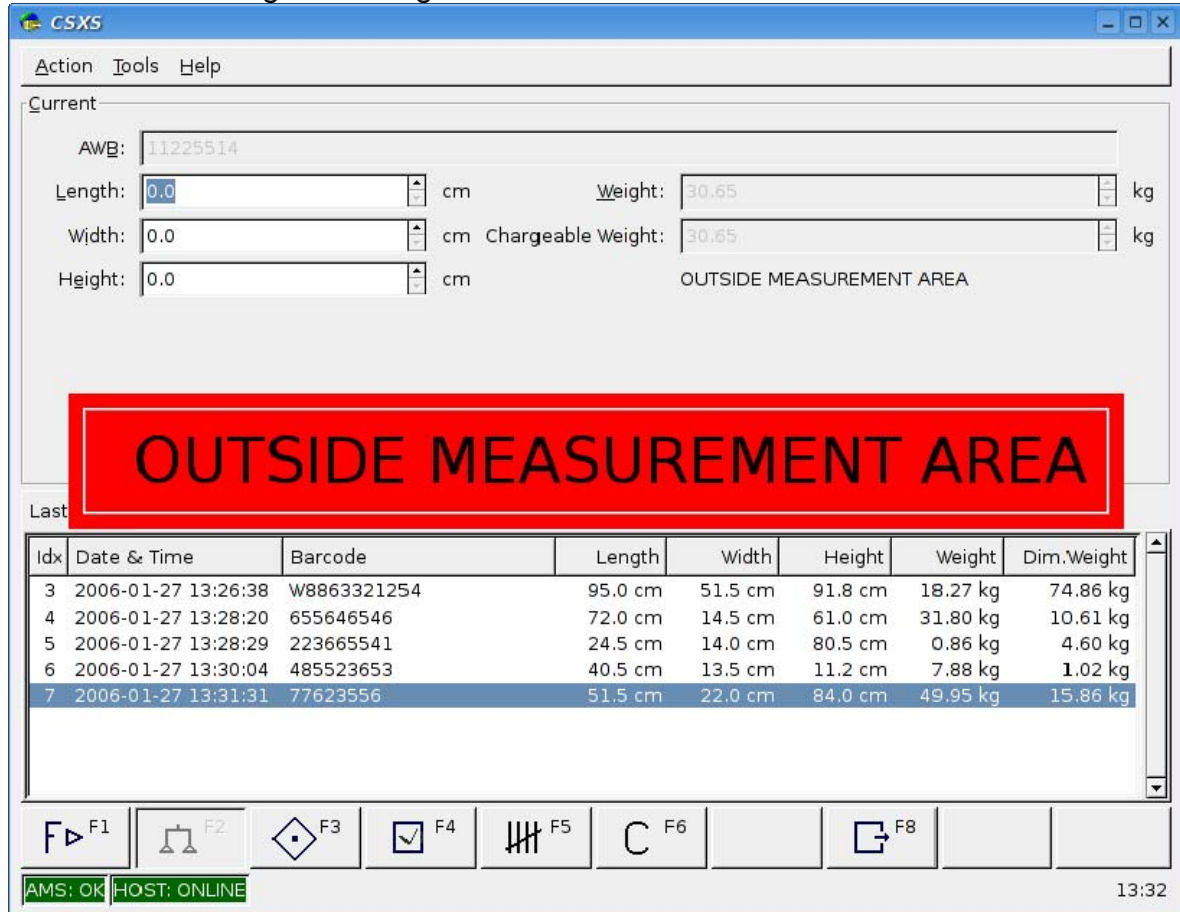


Figure 26 – Measurement error

Then the operator can select between either:

1. The operator can manually enter the values in the fields with 0.0, thus the dimensions or weight has to be manually obtained, which can be time consuming. On the other hand it could be that the item is not measurable, which means that the values must be manually keyed in. Manually entered values must be confirmed.

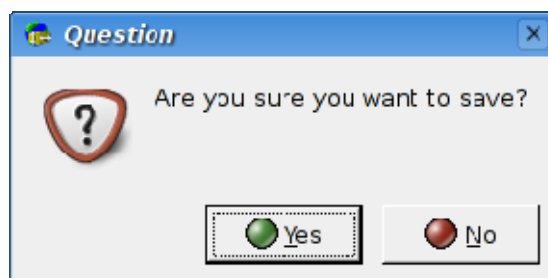




Figure 27 – Confirm storage

2. The operator can cancel the existing measurements with .
3. Re-measure the package with .

7.2.2 Resetting statistical counters

To reset statistical counters, do the following:

- a) Press **F1** and then **F5**;

7.2.3 Message window

The Messages window shows the content of several log files in the system. They are used to troubleshoot the system.

Press **F1** and then **F1** again, to open the Messages window. Use **F4** or **Esc** to close the window.

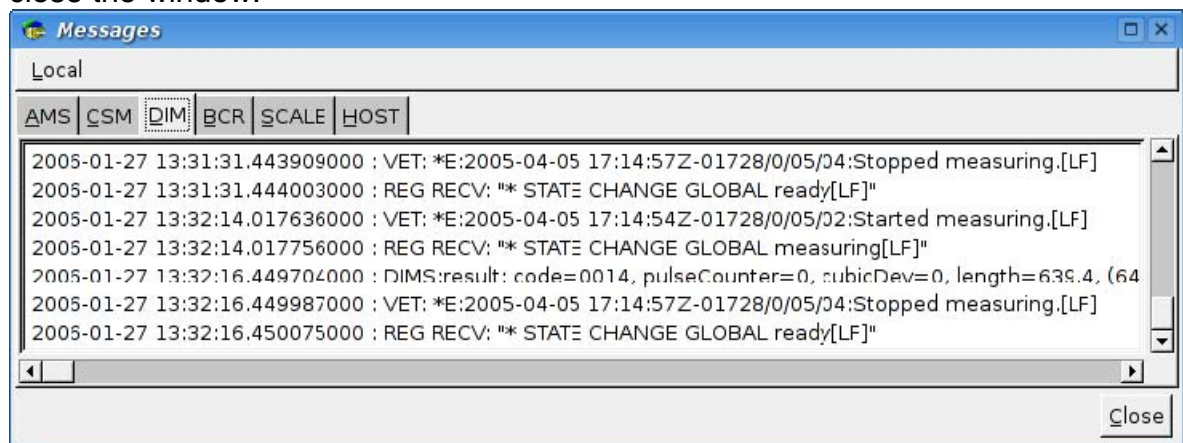
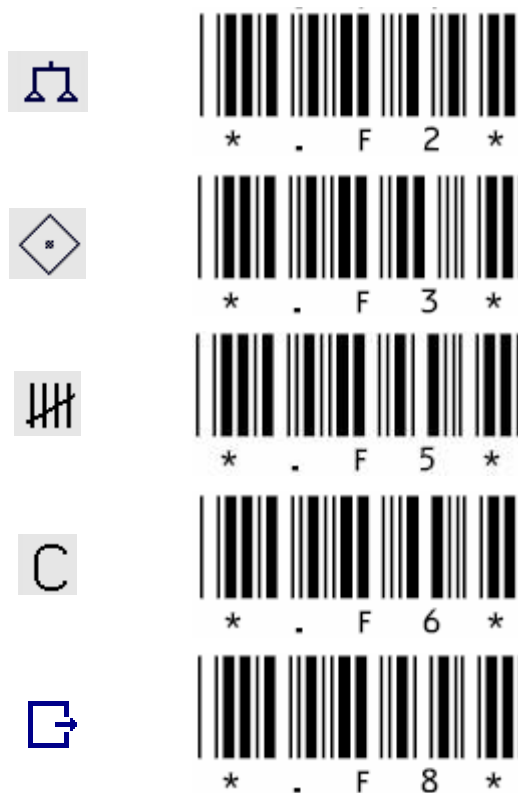


Figure 28 - Messages window

8 OPERATING BARCODES

The CSN810 TableTop™ has a list of barcodes that can be scanned with a barcode reader, which has the same function as using the keyboard or mouse.

In theory all functions on the first toolbar can be activated with a barcode, but in practical operations only these should be used.



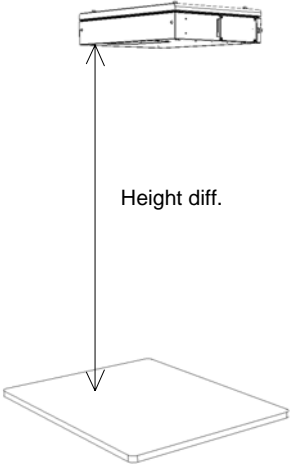
9 OBJECT REQUIREMENTS

The minimum measurement for the CSN810 is Length = 5.0 cm, Width = 5.0 cm and Height = 5.0 cm.

The maximum measurement for the CSN810 is dependent on the height difference between the top of the table and the bottom of the CSN810. See table below.

When using a scale on top of the table, the height of the scale must be deducted from the height difference.

Height diff (mm)	Max Length (mm)	Max Width (mm)	Max height (mm)
1400	900	750	900
	1200	800	750
1300	900	750	800
	1150	750	600
1200	900	750	700
	1150	750	500
1100	900	750	600
1000	900	750	500



Trying to measure a package that is too small, too large or outside the measuring field will give a status code.

Some countries require legal for trade certification. This may affect the sizes that the CSN810 is legal to dimension.

10 APPENDIX A ERROR CODES

10.1 ERROR CODES ON CS2200 DISPLAY

For every object that is measured, the system reports the dimensions and a status code. The status code is a five-digit code, where each digit represents certain measurement conditions. A zero in all digits represents an OK measurement. A non zero value in more than one digit indicates a combination of more than one measurement conditions. These codes are shown on the CS2200 display if available or as output to the Host.

The following messages are defined:

Code	Description
xxxx1	Object was outside measurement field on the low value x-coordinate side
xxxx2	Object was outside measurement field on the high value x-coordinate side.
xxxx3	Combination of xxxx1 and xxxx2. Object outside measurement field on both sides.
xxxx4	Object was too long to be measured.
xxxx5	Combination of xxxx1 and xxxx4.
xxxx6	Combination of xxxx2 and xxxx4.
xxxx7	Combination of xxxx3 and xxxx4.
xxx1x	Width or Length too small (less than legal minimum width/length).
xxx2x	Width or Length too large (larger than legal maximum width/length).
xxx4x	Object is positioned next to a taller object such that part of the object is hidden in the shadow from the taller one.
xxx8x	Special object recognized. Currently not used by CSN810.
xx1xx	Height too small (less than legal minimum height).
xx2xx	Height too large (larger than legal maximum height).
xx4xx	The object's match to a rectangular box is not as close to a rectangular object as required.
xx8xx	Not able to split a cluster of objects into rectangular shaped objects. Various reasons.
x1xxx	Unreliable measurement due to few measurement points, or measurement points found around edge of object are too far apart.
x2xxx	Object height is unreliable. Various reasons.
x3xxx	Combination of x1xxx and x2xxx.
x9xxx	CPU out of memory. Various reasons.
1xxxx	Dimensioning failed. Various reasons.
2xxxx	Package was outside measurement field on the low Y-value coordinate side.
4xxxx	Package was outside measurement field on the high Y-value coordinate side.
8xxxx	Package not placed correctly (e.g. not centered).
nOnE	The dimensioner cannot detect a package (not reported from the Dim process)
n Obj	The scanner detects multiple packages (not reported from the Dim process)

In addition to the above measurement codes are reported from the Dimensioning process, except "nOnE" and "n Obj" which only appear on the display. Other codes may be reported from other parts of the system. These codes are described in "Host Interface" of the CSX Reference Manual.

10.2 ERROR CODES IN CSX

Code	Description
0x00000002	Dimensioning instrument is not connected.
0x00000004	Bar code scanner is not connected.
0x00000008	Dimensioning instrument is not measuring
0x00000010	Scale indicator is not connected
0x00000020	Dimensioning instrument's error
0x00000040	Bar code scanner's error
0x00000080	Scale error
0x00000100	Alibi memory error
0x80000000	General software error, or the software is not initialized

The actual error code reported by the CSX software is a sum of these error codes. For example, if pulse encoders are not synchronized and the bar code scanner is not connected, the reported error code would be 0x00000005.

11 APPENDIX B – DECLARATIONS

The manufacturer of the system herein declares that:

- The European Standard EN 45501 : 1992 / AC 1993 and Welmec Guides for non-automatic weighing instruments have been adapted when designing and developing the software.
- Descriptions of legally relevant software modules, functions and interfaces in this document are complete and sufficient. There are no other legally relevant interfaces, modules or functions available.