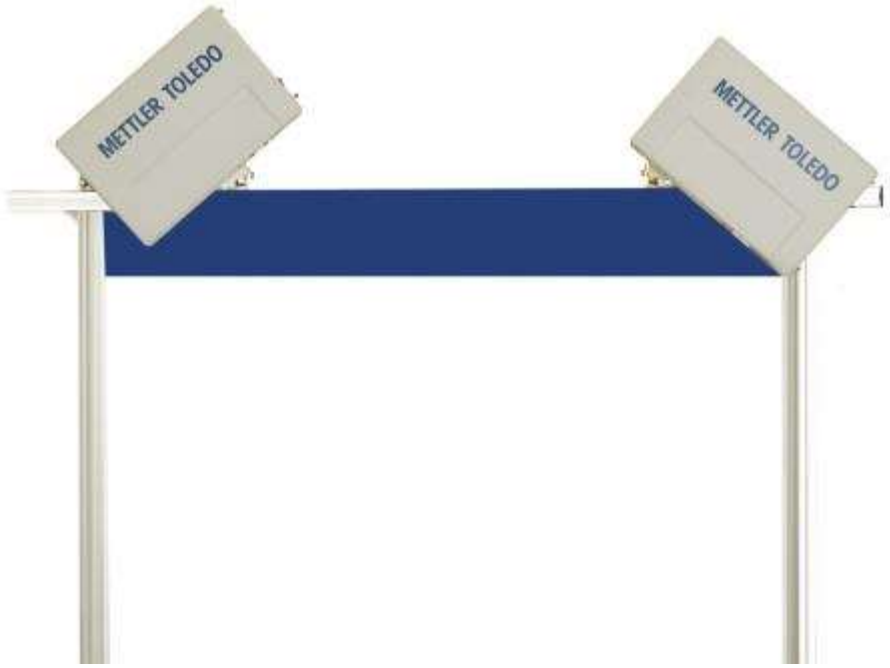
Quick Guide

CSN950 MultiHead

Dimensioner



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CSN950 MultiHead Quick Guide

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1. Safety Instructions

Safety and General Precautions

CSN950MH is fitted with Class2, visible (red) laser diode at wavelength 660nM. The laser warning label on the outside of the unit contains details about laser emission.

Avoid directly viewing into the laser beam unless absolutely necessary (general recommendation that also applies for Class 1 lasers).
If direct viewing is necessary, reduce the exposure time to a minimum, and view from the maximum possible distance.
Never look into the laser beam with any type of optical magnification instrument such as binoculars, magnifying glass, SLR camera view finders and similar (infrared viewers are safe although long-term exposure may degrade the instrument).

To avoid electric shock, the following recommendations should be observed:
Ensure that the power to the CSN950MH is disconnected before performing any service operation.
Check that the voltage has been disconnected using appropriately calibrated instruments before performing any service operations.
Check that the UPS (optional) is disconnected before performing any service operations.

NOTE: Opening the cabinet or removing the front cover shall be performed by trained personnel only. Any warranty or responsibility will be void if work inside the unit is performed by personnel not qualified by CARGOSCAN / METTLER TOLEDO.

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, as 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 observed. Thank you for your contribution to environmental protection.

2. Specifications and Configurations

General Information

The CSN950 MultiHead can be delivered in different configurations. The below alternatives are the most frequently used:

- The configuration 0 and 1 is for standalone systems or for System Integrators which make their own integration software.
- The configuration 2 and 3 have additional software from Mettler Toledo Cargoscan installed in the dimensioner.

- Look at alternatives below and pick one that fits you. The corresponding operating instruction can be found under chapter "Operating Instruction". Print out the needed parts and hang it up by the system.

Alternatives:

Configuration	Dimensioner	Human interface (Display)	Software running in	Software	Comment
0	CSN950MH	-	-	-	Standalone system / Integration SW by system integrator.
1	CNS950MH	CS2200LX	-	-	Standalone system / Integration SW by system integrator.
2	CSN950MH	Monitor	CSN950MH	OCTO-Landing page (Linux)	Integration SW by Mettler Toledo Cargoscan.
3	CNS950MH	Monitor	CSN950MH	OCTO-dynamic (Linux)	Integration SW by Mettler Toledo Cargoscan

CS2200LX can be used on configuration 2 and 3, even though the combination is not shown!

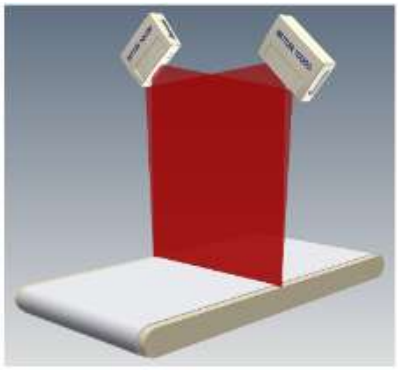
Technical Specifications

Speed	Belt width up to 900 mm: 3.3 m/s Belt width 900 - 1600 mm: 2.0 m/s
Min. size object (L x W x H)	50 x 50 x 20 mm
Max. size object (L x W x H)	Max speed 2,0m/s for object up to: 4000 x 1600 x 1200 mm. Max speed 3,3m/s for object up to: 2000 x 920 x 920 mm
Certified scale value (d)	D ≥2 mm height, d ≥ 5 mm length & width. (MID)
Accuracy	2mm height, 5mm length & width
Conveyor type	Flat conveyor belt
Irregular shapes	Singulated flow, non-touching Non-singulated, non-touching
Speed	Variable speed, measures down to 0 m/s
Display	CS2200, Octo CSM (VGA) AMS viewer
Sealing	Electronic sealing
Housing material	Aluminum
Operating temperature	-10 to +50°C, start condition 0°C
Humidity	Up to 100%, non-condensing
Level	Up 2000m above sea level indoors
Aperture angle	82°
Power	24 V DC ±15%
Power consumption	40 W
Fuse	ATO/FKS 4A
Product dimensions (L x W x D)	12 x 41 x 26 cm
Weight	9 kg
Light source	Laser diode, red, wavelength 660 nm
Laser	Class II (2)
OIML	R129 compliant
Connectivity	DVI-I, 4 x USB, 2 x Ethernet, Tacho In, Tacho Out, Serial, Binary I/O

3. Operating Instructions

CSN950MH

CSN950 MH



Turning the system on and off:

CSN950MH: On/Off switch is found close to the right front corner.
Each unit must be turned on / off.

Starting the system:

- After power-on, the Power On indicator on CSN950MH should light up on both units.
- During startup sequence the laser beam on CSN950MH will be shown.
- Second scanner will not start up before the 1st one is started.
- The complete start up time for both CSN950MH will be around 3min.

Operating the system:

1. Start the conveyor belt.
2. Place a parcel on the middle of the conveyor belt with the most stable and longest side down. Let it pass under the CSN950MH.
3. Volume measurement will be presented on the System Integrators system. See the System Integrators manual.
4. Only the package to be measured shall be in the scan field.
5. Next parcel will be automatically measured when it pass under the CSN950MH.

Stopping the system

- No system stop needed.

Alarms and errors:

- See also Operator guide and Installation manual for solving alarms and errors.

Objects to be measured:

- Legal for trade MID: All shapes. Single flow.
- Non-legal for trade: See Reference manual.

Status & Error codes - for CSN950MH

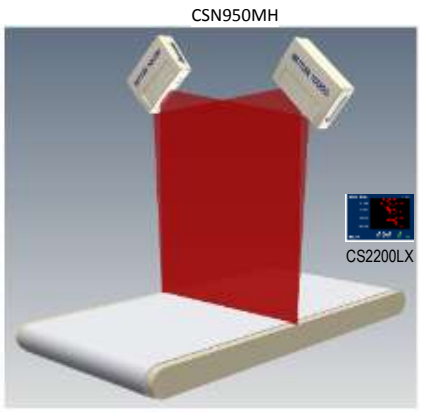
The following messages of status and error codes are viewed on:

- CSN950 / CSN950MH Web interface
- System Integrators Human Interface (if implemented from CSN950 / CSN950MH HOST Interface).

CSN950 MH CSN950	
Code	Explanation

xxxxxxx1	Object was outside measurement field on the right side
xxxxxxx2	Object was outside measurement field on the left side
xxxxxxx4	Object was too long to be measured
xxxxxxx8	Object data found too late to be reported at a specific delay after object passed (not implemented)
xxxxxx1x	Width is under minimum width defined by set-up
xxxxxx2x	Length is over maximum length defined by set-up
xxxxxx4x	Parcel in the shadow of another (at least 3 corners must be seen)
xxxxxx8x	Object is recognized as a special type of tray (mousetrap) used to handle specially shaped objects
xxxxx1xx	Height is below minimum height defined by set-up
xxxxx2xx	Height above maximum height defined by set-up
Xxxxx4xx	The object's match to a rectangular box is not as close to a cuboidal object as required.
xxxxx8xx	The object or group of objects is too complex for safe measurement.
xxxx1xxx	Length and width were not found due to object shape or features with measurement background or noise.
xxxx2xxx	Height was not found due to object shape or features with measurement background or noise problems.
xxxx4xxx	Photocell support was enabled, but no edges found for this object.
xxxx8xxx	There is corrupted data on the scan line.
xxxx9xxx	Dimensioning failed, CPU ran out of memory for this particular object
xxxxxxxx	Inspect extended field for error code. This is the case for all the error codes below.
xxx1xxxx	Square box failed to compute.
xxx2xxxx	Not applicable for dynamic systems. Clipped back
xxx4xxxx	Not applicable for dynamic systems. Clipped front
xxx8xxxx	Object not centered
xx1xxxxx	Lower 20 bits is a numeric sequential error code
xx8xxxxx	Object contains a hole
0x10xxxx	New code transmitted in the lower 4 digits.
0x100001	Not used (multiple object)
0x100002	No object was matched to the index telegram received
0x100003	Reserved
0x100004	Reserved
0x100005	Speed of conveyor outside limits
0x100006	Instrument window partially covered
0x100007	Package slipping on the belt
0x100008	Multiple ID (barcode)
0x100009	System in warm-up mode
0x100010	Seal is broken
0x100011	Did not receive a matching index telegram for the object.
0x100012	No object found during the read pulse
0x100013	Multiple index pulses for the object
0x100014	Multiple objects during one read pulse
0x100015	Belt was not "up-to-speed" while measuring the object

CSN950MH with CS2200LX display



Turning the system on and off:

CSN950MH: On/Off switch is found close to the right front corner.
Each unit must be turned on / off.

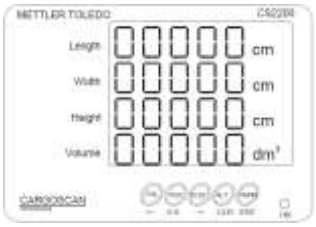
CS2200LX: Powered by CSN950MH.

Starting the system:

- After power-on, the Power On indicator on CSN950MH should light up on both units.
- During startup sequence the laser beam on CSN950MH will be shown.
- Second scanner will not start up before the 1st one is started.
- The complete start up time for both CSN950MH will be around 3min.
- Display will need 30-60sec for running through the self tests.
  When done, display will show 00000.

Operating the system:

1. Start the conveyor belt.
2. Place a parcel on the middle of the conveyor belt with the most stable and longest side down. Let it pass under the CSN950MH.
3. Volume measurement will automatically be presented on the LX2200 and reset after a while.
4. Measurement will also be sent to Host computer.
5. Only the package to be measured shall be in the scan field.
6. Next parcel will be automatically measured when it pass under the CSN950MH.



Ready

Successful measurement

Stopping the system

- No system stop needed.

Alarms and errors:

- See also Operator guide and Installation manual for solving alarms and errors.

Objects to be measured:

- Legal for trade MID: All shapes. Single flow.
- Non-legal for trade: See Reference manual.

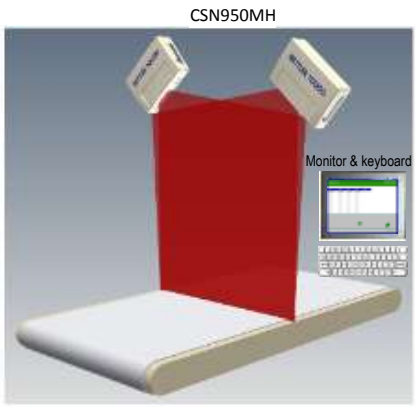
Status & Error codes - for CSN950MH with CS2200LX

The following messages of status and error codes are viewed on:

- CS2200LX Display
- CSN950 / CSN950MH Web interface
- System Integrators Human Interface (if implemented from CSN950 / CSN950MH HOST Interface).

CSN950 MH CSN950	
Code	Explanation
xxxxxxx1	Object was outside measurement field on the right side
xxxxxxx2	Object was outside measurement field on the left side
xxxxxxx4	Object was too long to be measured
xxxxxxx8	Object data found too late to be reported at a specific delay after object passed (not implemented)
xxxxxx1x	Width is under minimum width defined by set-up
xxxxxx2x	Length is over maximum length defined by set-up
xxxxxx4x	Parcel in the shadow of another (at least 3 corners must be seen)
xxxxxx8x	Object is recognized as a special type of tray (mousetrap) used to handle specially shaped objects
xxxxx1xx	Height is below minimum height defined by set-up
xxxxx2xx	Height above maximum height defined by set-up
Xxxxx4xx	The object's match to a rectangular box is not as close to a cuboidal object as required.
xxxxx8xx	The object or group of objects is too complex for safe measurement.
xxxx1xxx	Length and width were not found due to object shape or features with measurement background or noise.
xxxx2xxx	Height was not found due to object shape or features with measurement background or noise problems.
xxxx4xxx	Photocell support was enabled, but no edges found for this object.
xxxx8xxx	There is corrupted data on the scan line.
xxxx9xxx	Dimensioning failed, CPU ran out of memory for this particular object
xxxxxxxx	Inspect extended field for error code. This is the case for all the error codes below.
xxx1xxxx	Square box failed to compute.
xxx2xxxx	Not applicable for dynamic systems. Clipped back
xxx4xxxx	Not applicable for dynamic systems. Clipped front
xxx8xxxx	Object not centered
xx1xxxxx	Lower 20 bits is a numeric sequential error code
xx8xxxxx	Object contains a hole
0x10xxxx	New code transmitted in the lower 4 digits.
0x100001	Not used (multiple object)
0x100002	No object was matched to the index telegram received
0x100003	Reserved
0x100004	Reserved
0x100005	Speed of conveyor outside limits
0x100006	Instrument window partially covered
0x100007	Package slipping on the belt
0x100008	Multiple ID (barcode)
0x100009	System in warm-up mode
0x100010	Seal is broken
0x100011	Did not receive a matching index telegram for the object.
0x100012	No object found during the read pulse
0x100013	Multiple index pulses for the object
0x100014	Multiple objects during one read pulse
0x100015	Belt was not "up-to-speed" while measuring the object

CSN950MH with OCTO Landing-Page software and monitor



Turning the system on and off:

CSN950MH: On/Off switch is found close to the right front corner.
Each unit must be turned on / off.

Monitor: Separate power supply.

Starting the system:

- After power-on, the Power On indicator on CSN950MH should light up on both units.
- During startup sequence the laser beam on CSN950MH will be shown.
- Second scanner will not start up before the 1st one is started.
- The complete start up time for both CSN950MH will be around 3min. When done, monitor will show OCTO landing page screen.

Operating the system:

1. Start the conveyor belt.
2. Place a parcel on the middle of the conveyor belt with the most stable and longest side down. Let it pass under the CSN950MH.
3. OCTO Landing Page will animate the parcel on the belt, after parcel has passed CSN950MH.
4. Status of dimensioner scan result will show with a color code in the animation window.
   See "Animation Color Definition"
   Status will also be shown in the log above the animation window.
5. Measurement will also be sent to Host computer.
6. Only the package to be measured shall be in the scan field.
7. Next parcel will be automatically measured when it pass under the CSN950MH.

LANDING – PAGE

Stopping the system

- No system stop needed.

Objects to be measured:

- Legal for trade MID: All shapes. Single flow.
- Non-legal for trade: See Reference manual.

Alarms and errors:

- NOTE: Continuing measuring after a failing zero process may cause incorrect weight and dimensions.
- Red screen color: System error or measurement error. Operator shall check the screen and take action depending on the error.
  See also Operator guide and Installation manual for solving alarms and errors.

Status & Error codes - CSN950MH with OCTO Landing-Page

The following messages of status and error codes are viewed on:

- CSN950 / CSN950MH Monitor.
- CSN950 / CSN950MH Web interface
- System Integrators Human Interface (if implemented from CSN950 / CSN950MH HOST Interface).
-

CSN950 MH CSN950	
Code	Explanation
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xxxxxxx2	Object was outside measurement field on the left side
xxxxxxx4	Object was too long to be measured
xxxxxxx8	Object data found too late to be reported at a specific delay after object passed (not implemented)
xxxxxx1x	Width is under minimum width defined by set-up
xxxxxx2x	Length is over maximum length defined by set-up
xxxxxx4x	Parcel in the shadow of another (at least 3 corners must be seen)
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xxxxx1xx	Height is below minimum height defined by set-up
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Xxxxx4xx	The object's match to a rectangular box is not as close to a cuboidal object as required.
xxxxx8xx	The object or group of objects is too complex for safe measurement.
xxxx1xxx	Length and width were not found due to object shape or features with measurement background or noise.
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xxxx4xxx	Photocell support was enabled, but no edges found for this object.
xxxx8xxx	There is corrupted data on the scan line.
xxxx9xxx	Dimensioning failed, CPU ran out of memory for this particular object
xxxxxxxx	Inspect extended field for error code. This is the case for all the error codes below.
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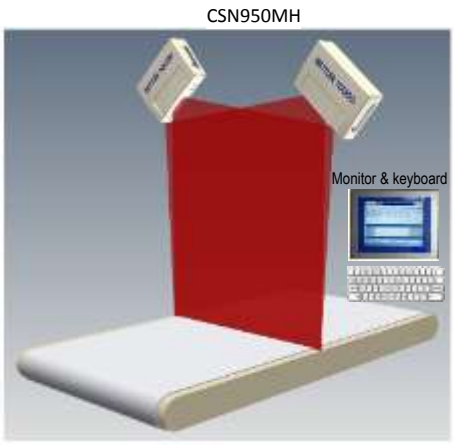
xxx4xxxx	Not applicable for dynamic systems. Clipped front
xxx8xxxx	Object not centered
xx1xxxxx	Lower 20 bits is a numeric sequential error code
xx8xxxxx	Object contains a hole
0x10xxxx	New code transmitted in the lower 4 digits.
0x100001	Not used (multiple object)
0x100002	No object was matched to the index telegram received
0x100003	Reserved
0x100004	Reserved
0x100005	Speed of conveyor outside limits
0x100006	Instrument window partially covered
0x100007	Package slipping on the belt
0x100008	Multiple ID (barcode)
0x100009	System in warm-up mode
0x100010	Seal is broken
0x100011	Did not receive a matching index telegram for the object.
0x100012	No object found during the read pulse
0x100013	Multiple index pulses for the object
0x100014	Multiple objects during one read pulse
0x100015	Belt was not "up-to-speed" while measuring the object

CSN950MH with OCTO Dynamic software and monitor



Turning the system on and off:

CSN950MH: On/Off switch is found close to the right front corner. Each unit must be turned on / off.

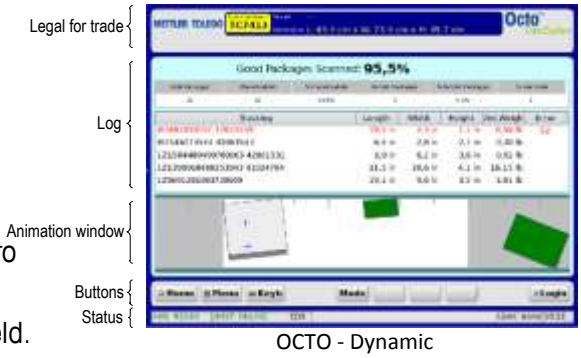
Monitor: Separate power supply.

Starting the system:

- After power-on, the Power On indicator on CSN950MH should light up on both units.
- During startup sequence the laser beam on CSN950MH will be shown.
- Second scanner will not start up before the 1st one is started.
- The complete start up time for both CSN950MH will be around 3min. When done, monitor will show OCTO dynamic software screen.

Operating the system:

1. Start the conveyor belt.
2. Place a parcel on the middle of the conveyor belt with the most stable and longest side down. Let it pass under the CSN950MH.
3. OCTO Dynamics software will animate the parcel on the belt, after parcel has passed CSN950MH.
4. Status of CSN950MH scan result will be shown with a color code in the animation window.
   See "Animation Color Definition".
   Status will also be shown in the log above the animation window.
5. OCTO Dynamic software sends the measurement result to the Host computer.
6. Only the package to be measured shall be in the scan field.
7. Next parcel will be automatically measured when it pass under the CSN950MH.



OCTO - Dynamic

Stopping the system

- No system stop needed.

Objects to be measured:

- Legal for trade MID: All shapes. Single flow.
- Non-legal for trade: See Reference manual.

Alarms and errors:

- NOTE: Continuing measuring after a failing zero process may cause incorrect weight and dimensions.
- Red field on the top of the LOG field indicates an error.
- System error or measurement error. Operator shall check the screen and take action depending on the error.
- See also Operator guide and Installation manual for solving alarms and errors.

Status & Error codes - CSN950MH with OCTO Dynamic

The following messages of status and error codes are viewed on:

- CSN950 / CSN950MH Monitor.
- CSN950 / CSN950MH Web interface
- System Integrators Human Interface (if implemented from CSN950 / CSN950MH HOST Interface).
-

Code	Explanation – Generic codes

0 Valid package data record.

2 Multiple valid parcel ID bar codes are found for a single package.

4 Single bar code may belong to multiple items. This may happen when the label is placed to the edge of the package and there is another piece next to it on the conveyor. If it is not possible to detect a proper piece to which the code may belong to then it is processed as a separate bar code record with a given status code, not belonging to any of the detected pieces.

6 Bar code is not captured for the item. Code is not read by scanner due to the bad placement, quality or the size of the label.

7 Dimensions are not captured for the item. This code is usually given when low profile items are processed and item is not detected by dimensioning instrument.

8 Volume measuring failed. This happens when processing unsupported piece types (non-cuboidal items for example) or item is outside of the measuring area (too high or too wide piece).

10 Barcode is read in tracking (barcode registering only) mode. This is a normal status code when the system is running in such mode. This code shall not be interpreted as an exception.

11 Zero dimensions. Item is detected by the dimensioning instrument but the size is set to zero due to the item shape or size. Too small or large items may be reported with zero measurements. This depends on the dimensioning instrument configuration parameters.

12 Weight information is not captured. May be caused by operational issues (abnormal packages flow on the conveyors) or low profile items that are not detected by the scale instrument (photoeye limitations).

13 Multiple volume readouts are captured for a single item. This is usually caused by bad items flow (multiple non-separated items are detected in the measuring area) or a bad item shape (single non-cuboidal item is "seen" as multiple smaller objects by dimensioning instrument).

14 Multiple weight readouts are captured for a single item. Caused by multiple non-separated items on the scale or unsupported items are processed - same item triggers the scale multiple times due to a specific item shape. Dimensioning related codes

51 Package out of measuring area. Operational error. Package is partly outside of the valid measuring field

52 Package is too small for measuring. Operational error. Package can not be measured due to it's size.

53 Package is too long for measuring. Operational error. Package can not be measured due to it's size.

54 Package is too high for measuring. Operational error. Package cannot be measured due to it's size.

56 Package is too small for legal measuring. Operational error. Package measurements cannot be reported due to it's size. Legal measurement limits are set in dimensioning instrument configuration. Those limits prevent reporting measurements that are outside of limits defined by local authorities or due to instrument accuracy.

57 Package is too big for legal measuring. Operational error. Package measurements can not be reported due to it's size. Legal measurement limits are set in dimensioning instrument configuration. Those limits prevent reporting measurements that are outside of limits defined by local authorities or due to instrument accuracy.

58 Package is not cuboidal. Operational error. Package measurements can not be reported due to it's ireegular shape. Instrument is set up to measure only rectangular boxes. Abnormal shape causes such code to be reported. Make sure that there are no straps, tape or any other visible pieces outside of the box.

59 Sensor error. Dimensioning instrument reports measuring sensor detection problem.

60 Piece is in shadow. Operational error. Piece is in shadow of another object and can not be measured.

61 Reflection problems. Dimensioning instrument reports measuring problems due to light reflections from the piece surface. Might be caused by bad light or by too reflective piece surface.

62 Too complex shape. Dimensioning instrument reports measuring error caused by piece shape. Piece can not be measured.

63 Impossible to measure due to shape. Dimensioning instrument reports measuring error caused by a specific shape.

64 Measuring failed. Dimensioning instrument reports measuring error due to other reason not covered by given codes above.

66 Measuring failed. Multiple objects inside measuring area. Weighing related codes

84 Underload. Scale is not able to measure, too light piece.

85 Overload. Scale is not able to measure, too heavy piece.

86 Under minimum weight. Weight value can not be reported, due to too light piece. Weigh is under legally approved minimum value.

87 Over maximum weight. Weight value can not be reported, due to too heavy piece. Weigh is over legally approved maximum value.

www.mt.com/CSN950

For more information

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