

> DM3610 Two-Head
Dimensioning System



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DM3610 Reference Manual

Ed.: 12/2014

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CONTENTS

REFERENCES	iv
Reference Documentation.....	iv
Support Through The Website	iv
Patents.....	iv
CONVENTIONS.....	v
COMPLIANCE	v
Electrical Safety	v
Laser Safety.....	v
Warning Labels	vi
Power Supply.....	vii
UL Listing.....	vii
CE Compliance	vii
FCC Compliance.....	vii
1 INTRODUCTION.....	1
1.1 System overview.....	1
1.2 DC3000 Dimensioning Controller.....	2
1.3 DM3610 Dimensioner	3
1.4 Datalogic Photoelectric Sensor	5
1.5 Tachometer.....	5
1.6 CBX Industrial Connection Box	6
1.7 Remote Display.....	7
1.9 Calibration Boxes	8
2 MECHANICAL INSTALLATION	9
2.1 Preparing for Mechanical Installion	9
2.2 Installation Sequence.....	10
2.3 What You Need to Know about Your Application	11
2.4 Mechanical Installation.....	12
2.4.1 Dimensions and Clearances	12
2.4.2 Physical Support Requirements	12
2.4.3 Vibration Limitations.....	12
2.4.4 General Mounting Guidelines.....	13
2.4.5 Conveyor Considerations	13
2.4.6 Mounting Structure Considerations	14
2.4.7 Mounting the Dimensioners with the Universal Mounting Brackets (UMB)	16
2.4.8 Typical Two-Head Application Installations	17
2.4.9 Mounting Structure Assembly	20
2.4.10 Prepare the Mounting Structure and Universal Mounting Brackets.....	21
2.4.11 Mounting the UMBs.....	22
2.4.12 Pre-Configuring the DM3610 Dimensioners	25
2.4.13 Install the DM3610 Dimensioners.....	30
2.4.14 Mounting the DC3000 Dimensioning Controller.....	31
2.4.15 Mounting the CBX Connection Box.....	31
2.4.16 Mounting the Datalogic Photoelectric Sensor (optional)	32
2.4.17 Mounting the Tachometer	33
2.4.18 Mounting the Power Supplies.....	34
2.4.19 Install the CD141 Display (optional)	34
2.4.20 Connect Communication and Power Cables to the Installation.....	35
2.5 Calibration and Setup.....	35

3	ELECTRICAL INSTALLATION	37
3.1	Preparing for Electrical Installation	37
3.2	Installation Sequence.....	38
3.2.1	Connecting a DM3610-3100/3200/3300 Singulated, non-touching.....	38
3.3	General Electrical Installation Guidelines and Precautions.....	39
3.5	Power Connections.....	40
3.6	CBX510 Connection Box.....	41
3.7	Connecting A PC to the Master DM3610.....	41
3.8	Wiring Into the CBX510 Connection Box.....	41
3.9	Photoelectric Sensor Connections	42
3.9.1	Photoelectric Sensor (NPN)	42
3.9.2	Photoelectric Sensor (PNP)	43
3.10	Tachometer Wiring.....	44
3.10.1	Tachometer Wiring (NPN Output)	44
3.10.2	Tachometer Wiring (PNP Output).....	45
3.12	Remote Display Wiring.....	46
3.13	Wiring to a Slave DM3610 Dimensioner (HEAD2) Via the CBX510.....	47
3.13.1	Slave DM3610 (NPN).....	47
3.13.2	Slave DM3610 (PNP).....	48
3.14	Serial Communication Wiring Through DC3000 Dimensioning Controller	49
3.15	Checking the Installation	50
4	DC3000 USER INTERFACE.....	51
4.1	Getting Started.....	51
4.1.1	Prerequisites	51
4.1.2	Accessing the DC3000 User Interface.....	51
4.3	User Interface Basics.....	54
4.3.1	DC3000 User Interface Menu Tree	54
4.3.2	Getting Help	54
4.4	Modify Settings	55
4.5	Modify Settings Controller Configuration	56
4.5.1	Modify Settings System Configuration	58
4.6	Modify Settings Dimensioning	60
4.6.1	Modify Settings Dimensioning Settings.....	60
4.6.2	Modify Settings Dimensioning Calibration	63
4.7	Modify Settings Tach/Trigger/Transmit.....	69
4.8	Modify Settings Network.....	73
4.8.1	Modify Settings Network Network Settings	74
4.8.2	Modify Settings Network Message Definition #N	78
4.9	Modify Settings Serial.....	83
4.9.1	Modify Settings Serial Port #N.....	83
4.9.2	Modify Settings Serial Message Definition #N	85
4.10	Modify Settings Logging Options.....	89
4.12	Modify Settings Save / Retrieve	90
4.13	Modify Settings Inscription (OIML Certified applications Only).....	93
4.14	Diagnostics	95
4.14.1	Diagnostics Monitor.....	96
4.14.2	Diagnostics DimView.....	99
4.14.3	Diagnostics Log Viewer.....	101
4.14.4	Diagnostics Audit and Alibi	102
4.14.5	Diagnostics Software Install	104
4.14.6	Diagnostics Help	106
5	DIMENSIONING SETUP AND CALIBRATION.....	107
5.1	System Setup.....	107

5.2	Adjust the Tilt and Skew of the DM3610 Dimensioners	108
5.2.1	Adjust the Tilt	108
5.2.2	Adjust the Skew	110
5.3	Electronically Aligning the System Lasers	111
5.3.1	Adjusting the Field of View and Angle Offset for Each Dimensioner (DM3610 User Interface)	111
5.4	Configure the System Using the DC3000 User Interface.....	114
5.4.1	DC3000 Dimensioning Settings and Calibration (DC3000 User Interface)	117
5.4.2	Tach/Trigger/Transmit (DC3000 User Interface)	122
5.5	Dynamic Calibration	124
5.6	Dimensioning Irregular-Shaped Packages	126
6	MAINTENANCE.....	130
6.1	Overview.....	130
6.2	Maintenance Tasks	131
6.2.1	Exterior Cleaning.....	131
6.2.2	Cleaning the of the DM3610 Dimensioners' Exit Windows	132
6.2.3	Cleaning the Photoelectric Sensor	133
6.2.4	Cleaning the Tachometer	134
6.2.5	Tighten Mounting Hardware	135
6.2.6	Checking Dimensioning System Connections	135
6.2.7	Verify System Operation	135
6.2.8	Verify Photoelectric Sensor Operation.....	135
6.2.9	Verify Tachometer Operation	136
7	TROUBLESHOOTING.....	137
7.1	DC3000 Dimensioning Controller Error Codes and Resolutions.....	138
8	TECHNICAL FEATURES	139
8.1	Technical Specifications.....	139
	INDEX.....	142

REFERENCES

REFERENCE DOCUMENTATION

The documentation related to the Multi-Head System management is listed below:

- CBX510 Connection Box Installation Manuals

SUPPORT THROUGH THE WEBSITE

Datalogic provides several services as well as technical support through its website. Log on to www.datalogic.com and click on the **Industrial Automation** [links](#) for further information:

- **Products - Industrial Automation - Identification**

Select your product from the links on the **Identification** page. The product page describes specific Info, Features, Applications, Models, Accessories, and Downloads including documentation.

- **Support & Services - Industrial Automation**

Several links from the **Industrial Automation** list take you to additional services such as: [Service Program](#) which contains Maintenance Agreements and Warranty Extensions; [Repair Centers](#); [On-Line RMA](#) Return Material Authorizations; [Technical Support](#) through email or phone, [Partner Program](#); [Downloads](#) for additional downloads.

PATENTS

This product may be covered by one or more of the following patents:

Utility patents: EP0652530B1; EP0851206B9; EP0851208B1; EP0851376B1; EP1363228B1; EP1607901B1; GB2440818B; JP3793585B2; JP4033958B2; US5903354; US5969823; US6061645; US6347740; US6442503; US6629639; US7586049; USRE36251.

Additional patents pending.

CONVENTIONS



WARNINGS or CAUTIONS: This symbol identifies a hazard or procedure that, if incorrectly performed, could cause personal injury or result in equipment damage. It is also used to bring the user's attention to details that are considered IMPORTANT.



HIGH VOLTAGE CAUTION: This symbol alerts the user they are about to perform an action involving, either a dangerous level of voltage, or to warn against an action that could result in damage to devices or electrical shock.



LASER CAUTION: This symbol alerts the user they are about to perform an action involving possible exposure to laser light radiation.



ESD CAUTION: This symbol identifies a procedure that requires you take measures to prevent Electrostatic Discharge (ESD) e.g., use an ESD wrist strap. Circuit boards are most at risk. Please follow ESD procedures.



NOTES: This symbol draws attention to details or procedures that may be useful in improving, maintaining, or enhancing the performance of the hardware or software being discussed.

COMPLIANCE

ELECTRICAL SAFETY

This product conforms to the applicable requirements contained in the European Standard for electrical safety EN-60950 at the date of manufacture.

LASER SAFETY

The following information is provided to comply with the rules imposed by international authorities and refers to the correct use of the DM3610 dimensioner.

Standard Regulations

This dimensioner uses a low-power laser diode. Avoid staring at the beam as one would with any very strong light source, such as the sun.

Take care when installing the laser device to avoid inadvertent laser beam contact with the eye of an observer, including through reflective surfaces.

This product conforms to the applicable requirements of both EN60825-1 and CDRH 21 CFR1040 at the date of manufacture. The DM3610 uses a visible laser diode (red) 658 nm typical, Collimated < 1.5mR, <9.6mW peak power, <1.0mW Average power, Class 3R (IEC60825-1), Class II (CDRH 21CFR1040), in the dimensioning process.

There is a safety device which allows the laser to be switched on only if the motor is rotating above the threshold for its correct scanning speed.



WARNING: Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.

WARNING LABELS

Warning labels indicating exposure to laser light and the device classification are applied onto the body of the DM3610 dimensioner.

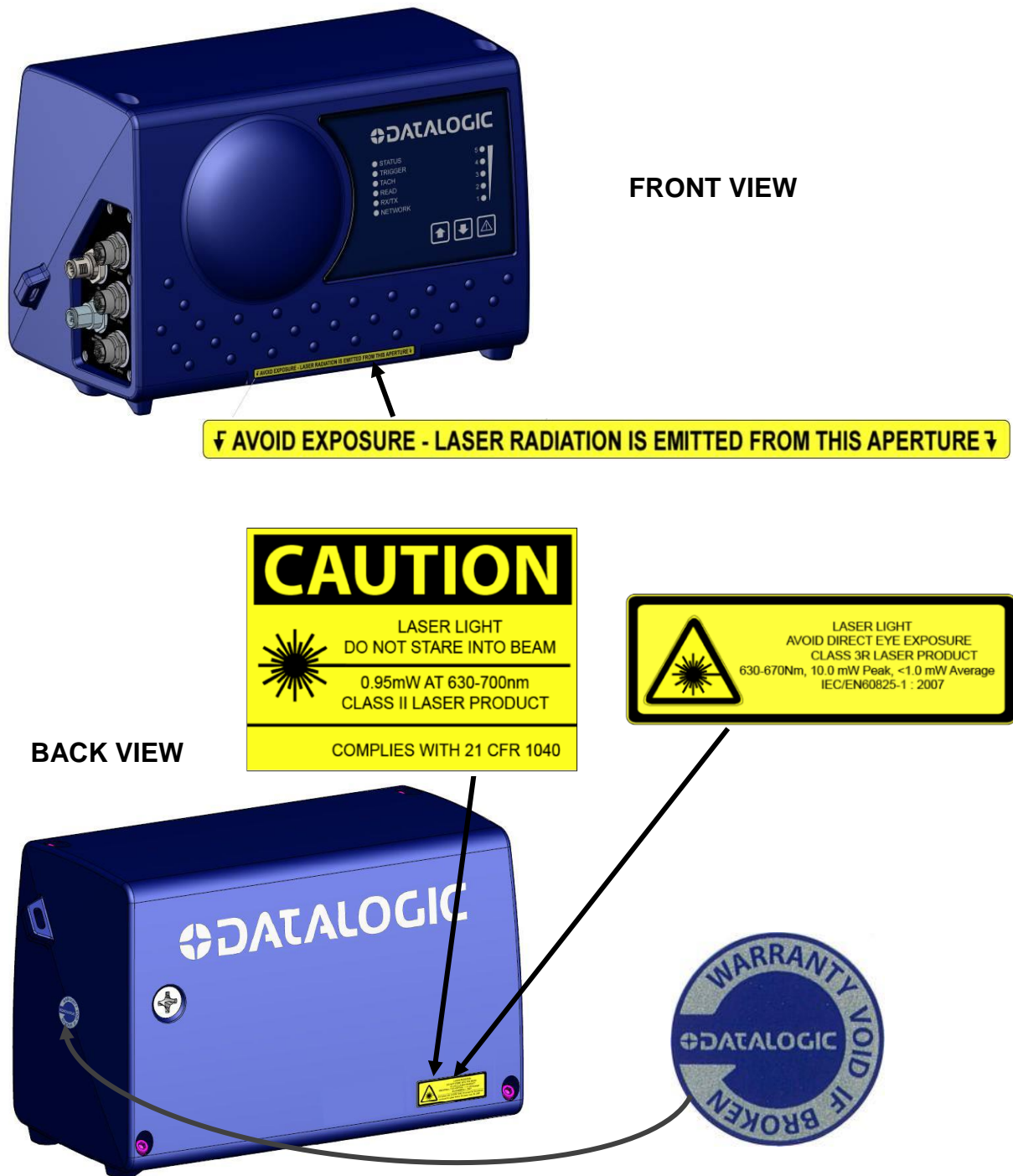


Figure 1: Warning, Device Class, Warranty Labels



NOTE: Warning label used depends on specific product configuration.



WARNING: Disconnect the power supply when installing the device or during maintenance to avoid exposure to hazardous laser light.



WARNING: There are no user serviceable parts inside the DM3610. Service should only be performed by Datalogic trained and certified technicians.

The laser diodes used in this device are classified as Class 3B laser products according to EN 60825-1 regulations and as Class IIIb laser products according to CDRH regulations. Any violation of the optic parts in particular can cause radiation up to the maximum level of the laser diode (30 mW at 658 nm typical).

POWER SUPPLY

This system is intended to be installed by Qualified Personnel only.

The DM3610 dimensioner is intended to be supplied by a UL/CE Listed power supply marked SELV (Separated Extra Low Voltage), output rated 24 VDC, minimum 4.0 Amp.

UL LISTING



CE COMPLIANCE



WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC COMPLIANCE



Modifications or changes to this equipment without the expressed written approval of Datalogic could void the authority to use the equipment.

This device complies with PART 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference which may cause undesired operation.

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

1 INTRODUCTION

1.1 SYSTEM OVERVIEW

A **Two-Head Dimensioning System** consists of a **DC3000 Controller** and two **DM3610** heads strategically positioned above a material transport system. Its primary purpose is to report the dimension (length, width, and height) of each parcel conveyed by the transport system. The parcels are scanned while in motion; the scan data is transmitted via Ethernet to the Controller; and the Controller computes the dimension results.

A DM3610 head is a complex opto-electrical measurement instrument. When deployed as a standalone device, it is solely responsible for computing parcel dimensions. But, in the Multi-Head Dimensioning System, it is the DC3000 Controller that computes parcel dimensions, and the head's role is to continuously scan its field of view and measure and transmit distance or "range" data to the Controller. Input from a contact tachometer, typically mounted on the underside of the conveyor, is incorporated by the head to define the x coordinate of its scan data.

The typical system components are shown in the diagram below:

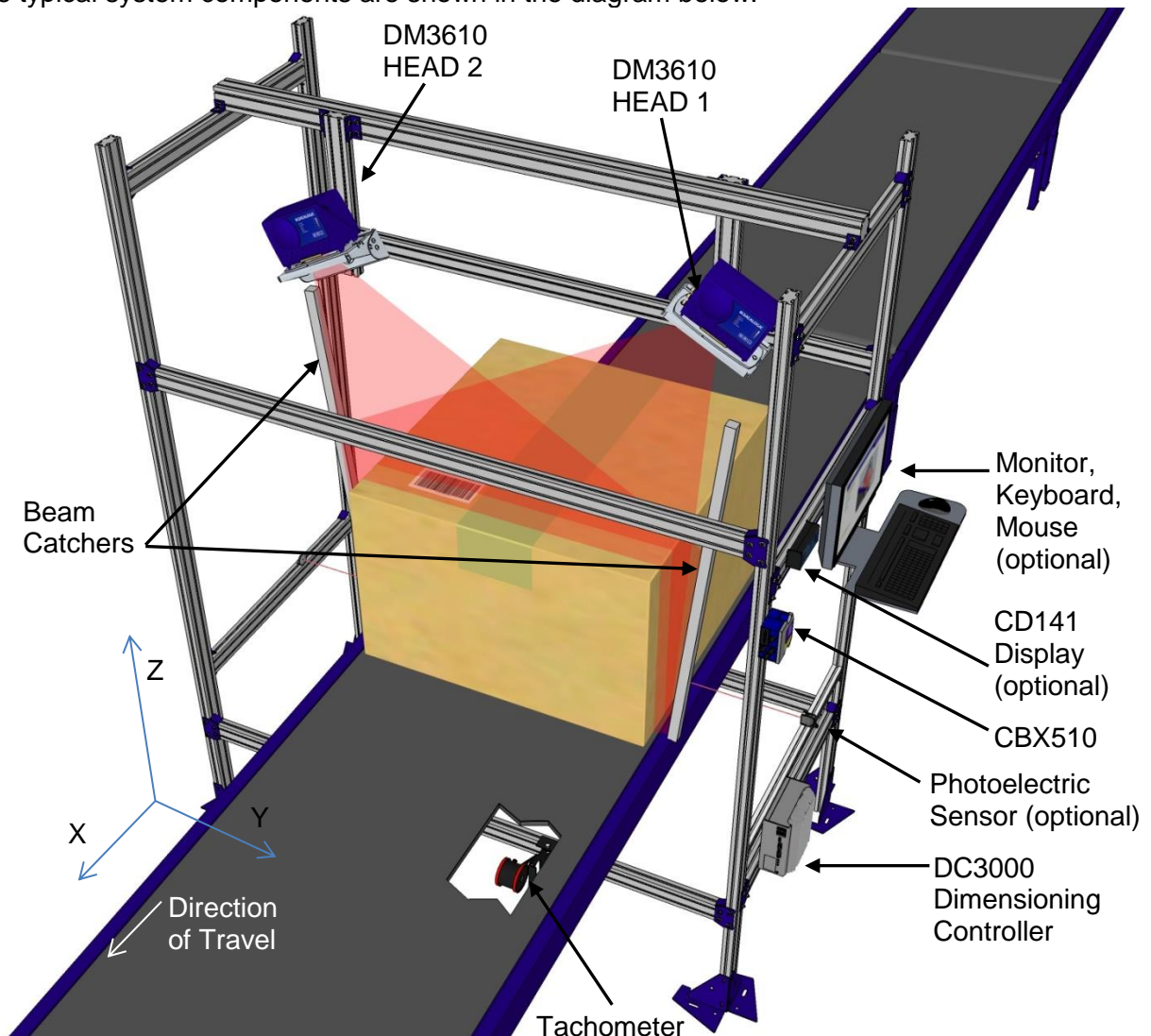


Figure 2: System Overview

1.2 DC3000 DIMENSIONING CONTROLLER

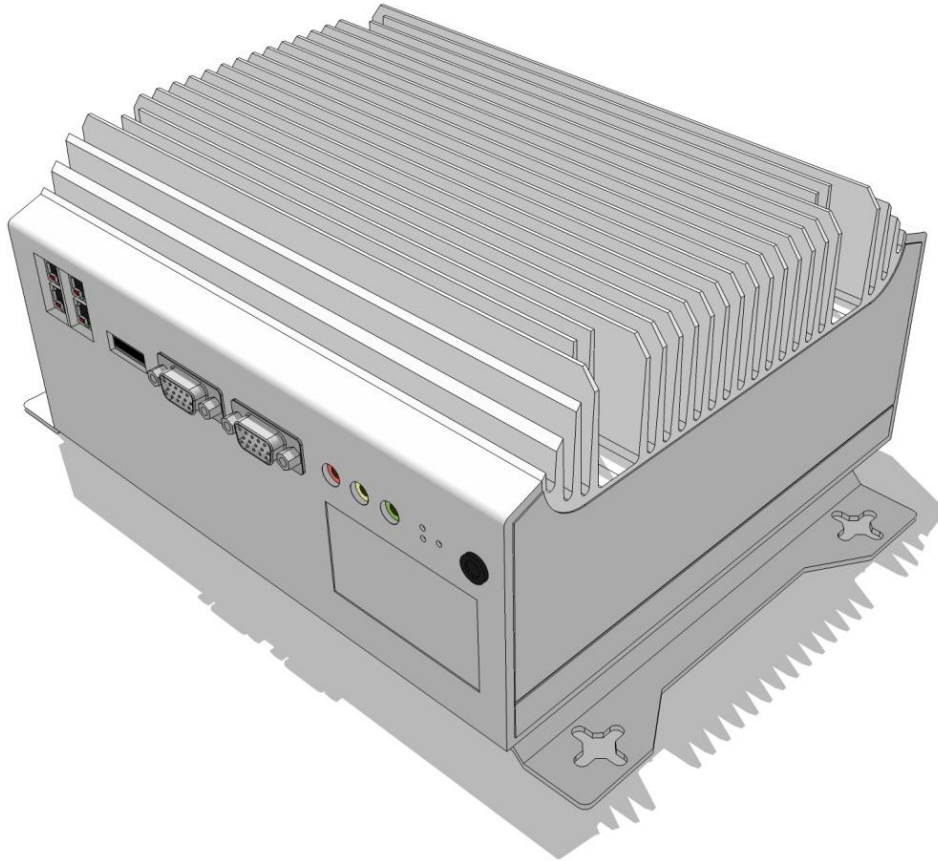


Figure 3: DC3000 Dimensioning Controller

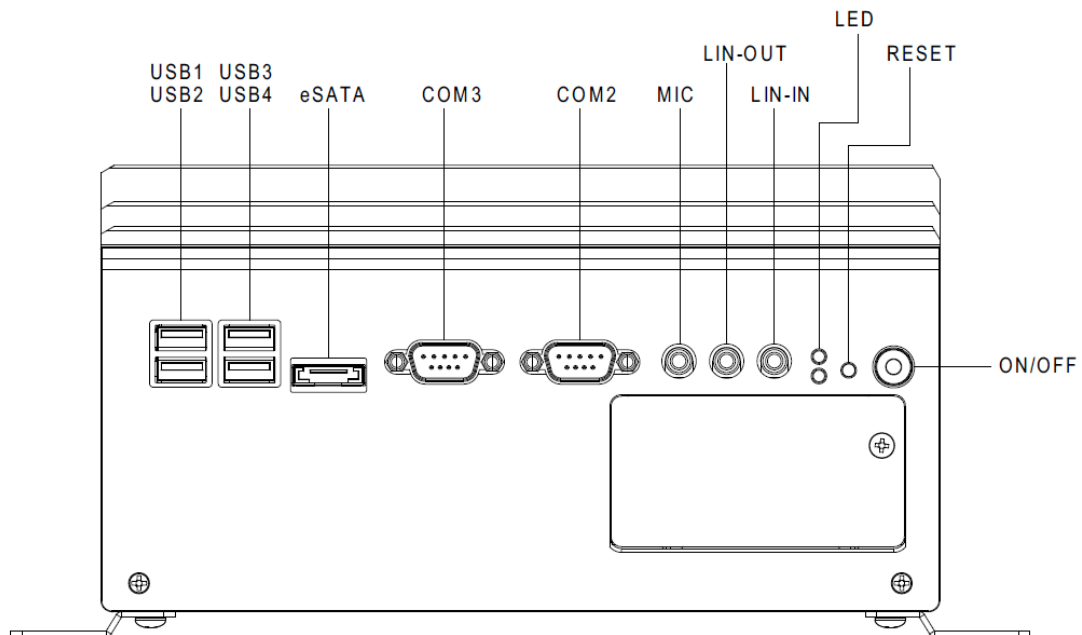


Figure 4: DC3000 Dimensioning Controller Front Panel

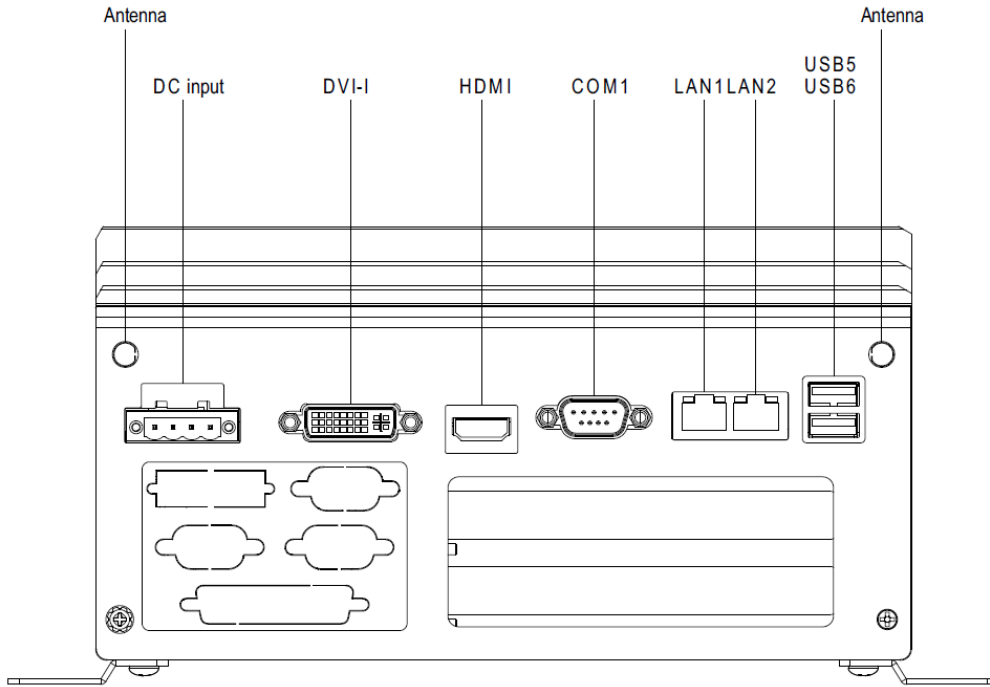


Figure 5: DC3000 Dimensioning Controller Rear Panel

1.3 DM3610 DIMENSIONER

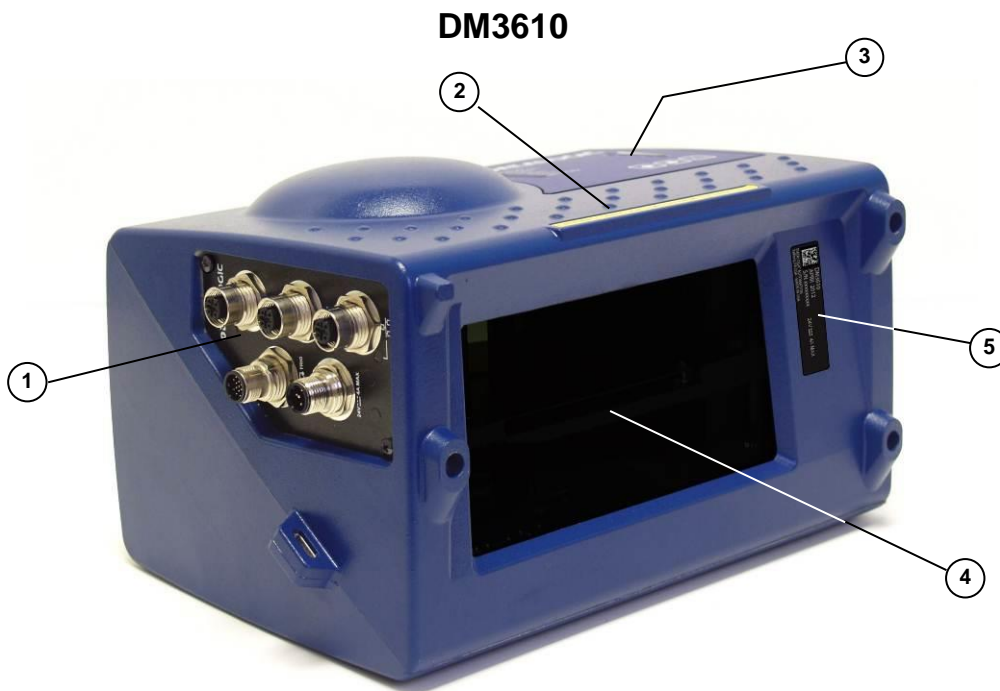


Figure 6: DM3610

- ① Connector Panel
- ② Laser Safety Label
- ③ Control Panel
- ④ Laser Exit Window
- ⑤ Serial Number Tag

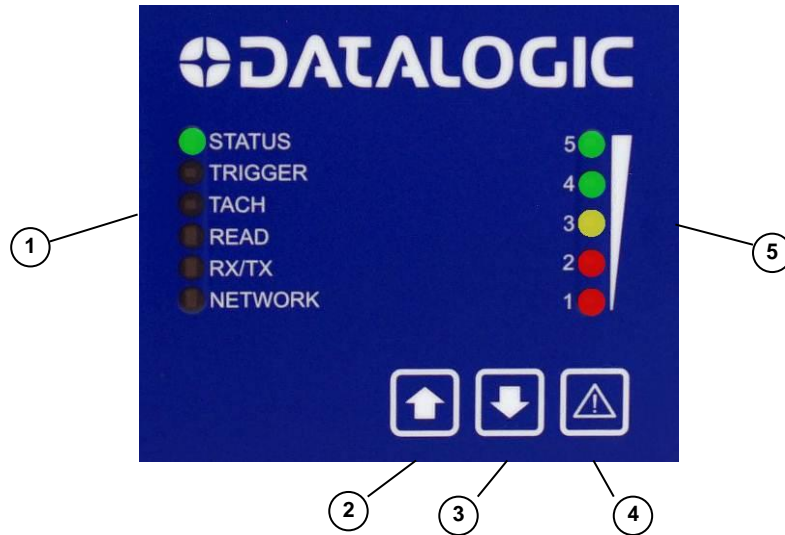


Figure 7: Control Panel

- ① LED Status Indicators
- ② Restore Button
- ③ Backup Button
- ④ Laser Shutoff/Recovery Button
- ⑤ Bar Graph LEDs 1-5



Figure 8: Connector Panel

- ① I/O
- ② Power 24V --- 4A Max
- ③ Host
- ④ Ethernet Port 1
- ⑤ Ethernet Port 2

1.4 DATALOGIC PHOTOELECTRIC SENSOR

The optional **Datalogic Photoelectric Sensor** is used in two-head dimensioning system to detect the presence of an item in the dimensioning area.

The photoelectric sensor is used in singulated systems where the packages are separated by an open space between the trailing edge of one package and the leading edge of the next. The photoelectric sensor enables a programmable transmit point at a defined distance from the sensor. Without the photoelectric sensor, the DM3610 can be run in continuous trigger mode (see **Modify Settings | Tach/Trigger/Transmit** in chapter 4).

Depending on the application, these devices may need to be configured differently. While the photoelectric sensor and tachometer work well with belt conveyors, a special configuration is needed for tilt-tray and cross-belt sorter applications.



Figure 9: Photoelectric Sensors

1.5 TACHOMETER

The tachometer provides a continuous pulse to the system, which provides feedback on conveyor speed and can be used to help track the package position along the length of the conveyor.



Figure 10: Tachometer, Mounting Bracket, and Cable DM3610 in DWS Systems

1.6 CBX INDUSTRIAL CONNECTION BOX

CBX Series are industrial connection boxes that can be used to connect the DM3610 to the external display, tachometer, photoelectric sensor, serial devices, relays, or other peripherals.



Figure 11: CBX510 Industrial Connection Box

1.7 REMOTE DISPLAY

In all legal-for-trade applications, the certified dimensioning system is required to have at least one remote display per site for inspection purposes. The number of displays required per site varies according to certification type.

The Datalogic CD141 Remote Display is a 2 line x 20 character vacuum fluorescent display. The display shows the dimensions for the most recent two boxes (with the most recent box on the lower line). The display shows:



Figure 12: Dedicated Remote Display

Legend:

- BOX** displays box sequence number (0 to 9)
- L** displays longest horizontal dimension (length)
- W** displays shortest horizontal dimension (width)
- H** displays height
- UNITS** displays Metric (mm) or Imperial (in) dimension units used

1.9 CALIBRATION BOXES

The DM3610 system requires at least one set of calibration boxes, which aid in system setup and calibration. Two boxes and two margin spacers come with the system in calibration kits in your choice of Metric or Imperial configuration and in the following sizes:

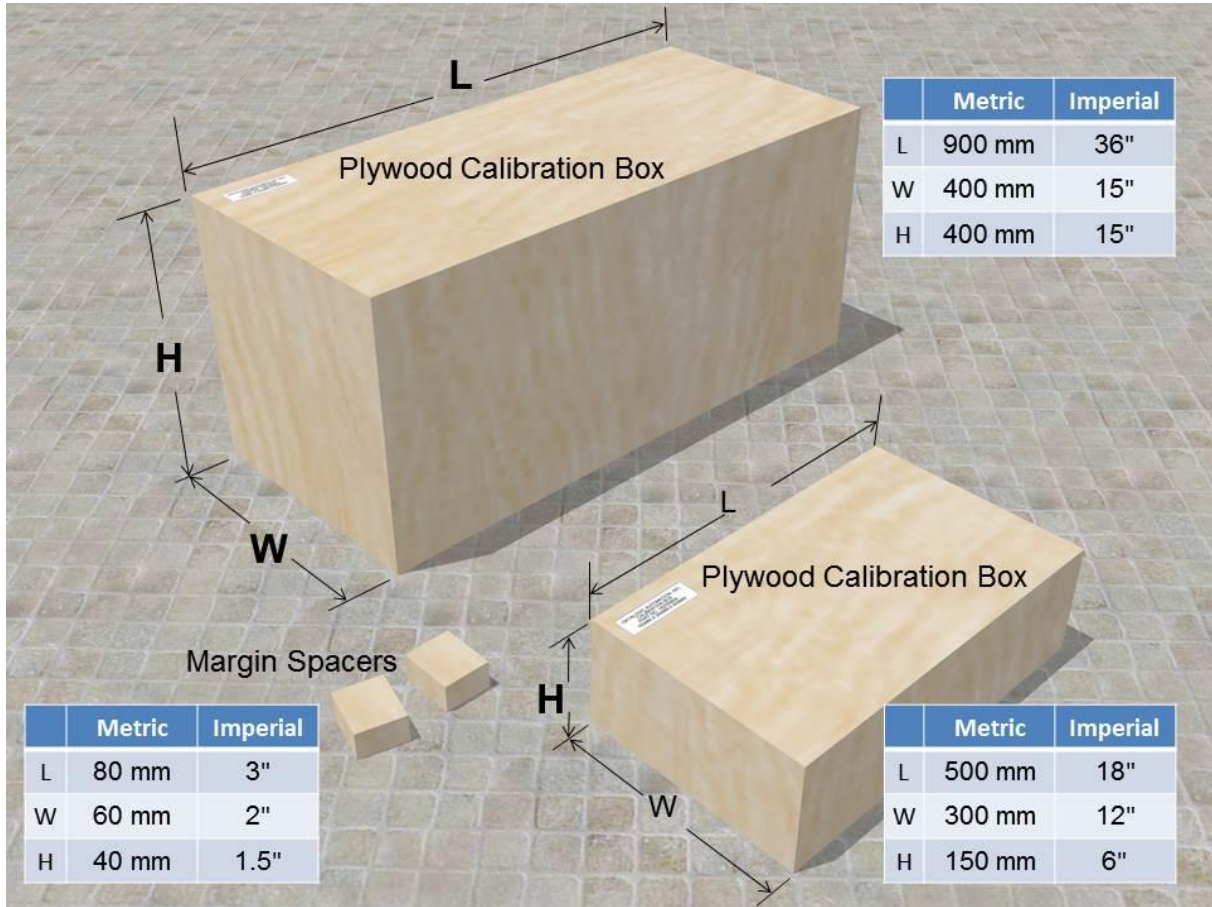


Figure 13: Calibration Kit

For information on using this kit for calibration, see *Dimensioner Calibration* in chapter 5.

2 MECHANICAL INSTALLATION



WARNING: Electrical Installation by Qualified Service Technicians Only! Procedures may involve exposure to high-voltage. A trained and authorized technician must perform these procedures. Do not attempt to perform any electrical installation procedures unless you are a trained technician.



IMPORTANT: The DM3610 contains electronics that may be affected by electrostatic discharge (ESD). To prevent personal injury or damage to the unit, please follow the safety precautions and warnings found in the *References* section at the beginning of this manual. Failure to follow these precautions may void your warranty.

2.1 PREPARING FOR MECHANICAL INSTALLION



IMPORTANT: Application-specific drawings and documents provided by Datalogic supersede any contradictory content in this manual.

Before mounting any components, please do the following:

- Read all instructions before beginning your installation.
- Define and confirm the accuracy of your application's requirements and structure position, especially the height of the conveyor from the floor.
- Review all installation-specific drawings provided with your system.
- Review and plan the mechanical installation of all devices used in your application. Be sure to allow adequate clearance for maintenance.
- Review and plan the power requirements for your application.
- Check the contents of the shipping cartons against the packing list(s).
- Record all product serial numbers.



NOTE: Refer to the Reference Documentation for details on connecting your dimensioner(s) to other devices in the system. For specific information on the DM3610 dimensioner, refer to the **DM3610 Reference Manual**.

2.2 INSTALLATION SEQUENCE



NOTE: Everything should be **MECHANICALLY INSTALLED** before performing any **ELECTRICAL INSTALLATION**. See *chapter 3* for electrical installation details.

To complete mechanical installation and setup, you must:

- Review the details of your application's requirements
- Erect mounting structure or other supporting structures
- Determine and mark the Universal Mounting Brackets (UMB) locations
- Mount the UMB Mounting Plates to the UMBs (if not already installed)
- Mount the UMBs to the mounting structure
- Change the default parameters each DM3610 in the system to include a unique name, IP Address, and other parameters (See 2.4.12)
- Mount the DM3610 dimensioners to their UMBs
- Mount the photoelectric sensor to the mounting structure (optional)
- Mount the tachometer to the mounting structure (optional)
- Mount the Remote Display to the mounting structure (required for Legal-for-Trade installations, dependent on requirements)
- Mount the CBX510 connection box to the mounting structure
- Mount the DC3000 Controller to the mounting structure
- Complete electrical installation (See *chapter 3*)
- Align the DM3610 dimensioners for proper operation
- Calibrate the DM3610 dimensioners (See *chapter 5*)
- Configure the DC3000 Controller (See *chapter 4*)
- Check system operations (See *chapter 5*)

2.3 WHAT YOU NEED TO KNOW ABOUT YOUR APPLICATION

To assure you get optimal performance out of your Dimensioning System, it must be installed to meet the complete needs of your application. Therefore, take the time to know the details of your application.

Below is what you will need to know before you can begin installation:

- **Conveyor Specifications**
 - Conveyor type: Belt, tilt-tray, cross belt, other?
 - What is the conveyor width?
 - What is the conveyor speed?
 - Does conveyor speed vary or is it constant?
 - Will bar code scanning also take place?
 - Where is the dimensioning area to be located on your conveyor?
 - Is the conveyor surface flat?

- **Product and Dimensioning Specifications**
 - Are the packages being transported always singulated (not touching) or non-singulated (possibly touching)?
 - Are products always cuboidal (box shaped), non-cuboidal (irregular shaped) or is there a mixture of both?
 - Is side-by-side object dimensioning (non-singulated) required?
 - How many different product sizes may be involved?
 - Are products justified: toward/away from dimensioner/reader, centered, or variable?

- **Application Specifications**
 - What will be done with the dimensioning information?
 - How will this information be used in your application?
 - What are your communication requirements?

While it is nearly impossible to cover all application configurations, the next several pages provide the basics on determining how to mechanically install your dimensioning system. If you need additional assistance, feel free to contact your sales representative or customer service.

2.4 MECHANICAL INSTALLATION

Because the DM3610 dimensioners are measuring devices, calibration and proper usage of this devices are necessary for proper operation. The DM3610 dimensioners are shipped from Datalogic calibrated. It is therefore essential that the units be mounted exactly as detailed on the application drawing to retain proper calibration. The critical parameters are:

- Minimal vibration of unit on mounting structure - any movement of the DM3610 dimensioners due to vibration/swaying of the mounting structure will directly impact the dimensioning accuracy.
- Mounting height above the conveyor.
- The dimensioner scan lines must be perpendicular to conveyor travel.
- If used, the photoelectric sensor's beam path must be parallel to the dimensioner scan line(s).
- Tachometer assembly in contact with the same conveyor belt where the dimensioning scan lines are projected, to insure proper speed indication
- The dimensioner scan lines should be located at least 7 - 8 cm [3 inches] away from any other scan pattern on the conveyor belt, to eliminate the possibility of reflections interfering with dimensioning accuracy.

2.4.1 Dimensions and Clearances

The overall dimensions of the DM3610 are provided in *section 2.4.6 and chapter 8, Technical Features*.

The DM3610 is a sealed, unventilated unit. Mounting the unit with 300 mm [12"] of clearance (front, top, and sides) is recommended for ease-of-access and cooling.



IMPORTANT: For installation, maintenance and service reasons, approximately 300 mm [12 inches] of clearance is recommended.

2.4.2 Physical Support Requirements

For details on the weight of the DM3610 dimensioner, *see chapter 8, Technical Features*. Multiple-head systems may include further details on the physical support requirements with any application-specific documentation provided.

2.4.3 Vibration Limitations

The DM3610 is designed and tested to withstand continuous sine wave vibrations between 10 and 500 hertz (limited to a displacement of 0.40 mm [0.0157 inches] for frequencies between 10 and 50 Hz and limited to 2 G acceleration for frequencies between 50 and 500 Hz).

2.4.4 General Mounting Guidelines

It is important that you follow these general precautions when installing, setting up, operating, maintaining, troubleshooting, or replacing any Datalogic products, parts or related equipment.



CAUTION: The DM3610 uses a visible laser diode (red) 658 nm typical, Collimated < 1.5mR, <9.6mW peak power, <1.0mW Average power, Class 3R (IEC60825-1), Class II (CDRH 21CFR1040), in the dimensioning process. Avoid staring at the laser light source. While laser light does not constitute a health hazard, staring at the laser for prolonged periods could result in eye damage.

As you plan and install your DM3610 dimensioning system application, be sure to keep the following guidelines in mind:

- All mounting structure assembly and equipment installation can be performed by one installer.
- Determine the proper orientation and position of each DM3610.
- Leave adequate clearances (approximately 300 mm [12 inches]) for wiring around each DM3610.
- Route wires carefully to reduce or minimize electrical noise. When power and communication wiring must cross, make their intersection perpendicular.
- Proper grounding limits the effects of noise due to Electromagnetic Interference (EMI).

2.4.5 Conveyor Considerations

In the process of dimensioning a package, the DM3610 dimensioners are measuring the distance between the package and laser origin. Therefore, any motion of the package other than that in the conveyor direction will impact dimensioning accuracy. Consider the following:

- Make sure the dimensioners are mounted at least 300 mm [12 inches] plus the longest box away from any belt transitions. This applies to both packages entering and leaving the system. This means the DM3610 requires a conveyor belt length of at least 600 mm [24 inches] plus twice the longest box to ensure box stability under the system.
- The dimensioners should be placed so packages are not sliding, tumbling, or accelerating/decelerating when they pass under the scan line.
- Belt seams or unevenness that elevate packages above the normal belt surface will impact dimensioning accuracy.

2.4.6 Mounting Structure Considerations

You can provide your own mounting structure or Datalogic can design one for you. We recommend using a Datalogic mounting structure for standard applications.

Your mounting structure must provide the following capabilities:

- It is adjustable enough for you to move your dimensioners to the optimum position for proper dimensioning.
- It is able to hold 16 kg [36 lbs] (three times the weight of the DM3610) times the total number of dimensioners in your application.
- It allows a technician access to the dimensioners when mounted.
- It must be as vibration free as possible so as not to affect the dimensioning accuracy.
- It is constructed of steel or aluminum.
- It provides approximately 300 mm [12 inches] minimum clearance on all sides of the dimensioners and DC3000 Dimensioning Controller. This clearance is necessary to provide proper ventilation, allow access to all panels of the dimensioners, and allow room for proper servicing.

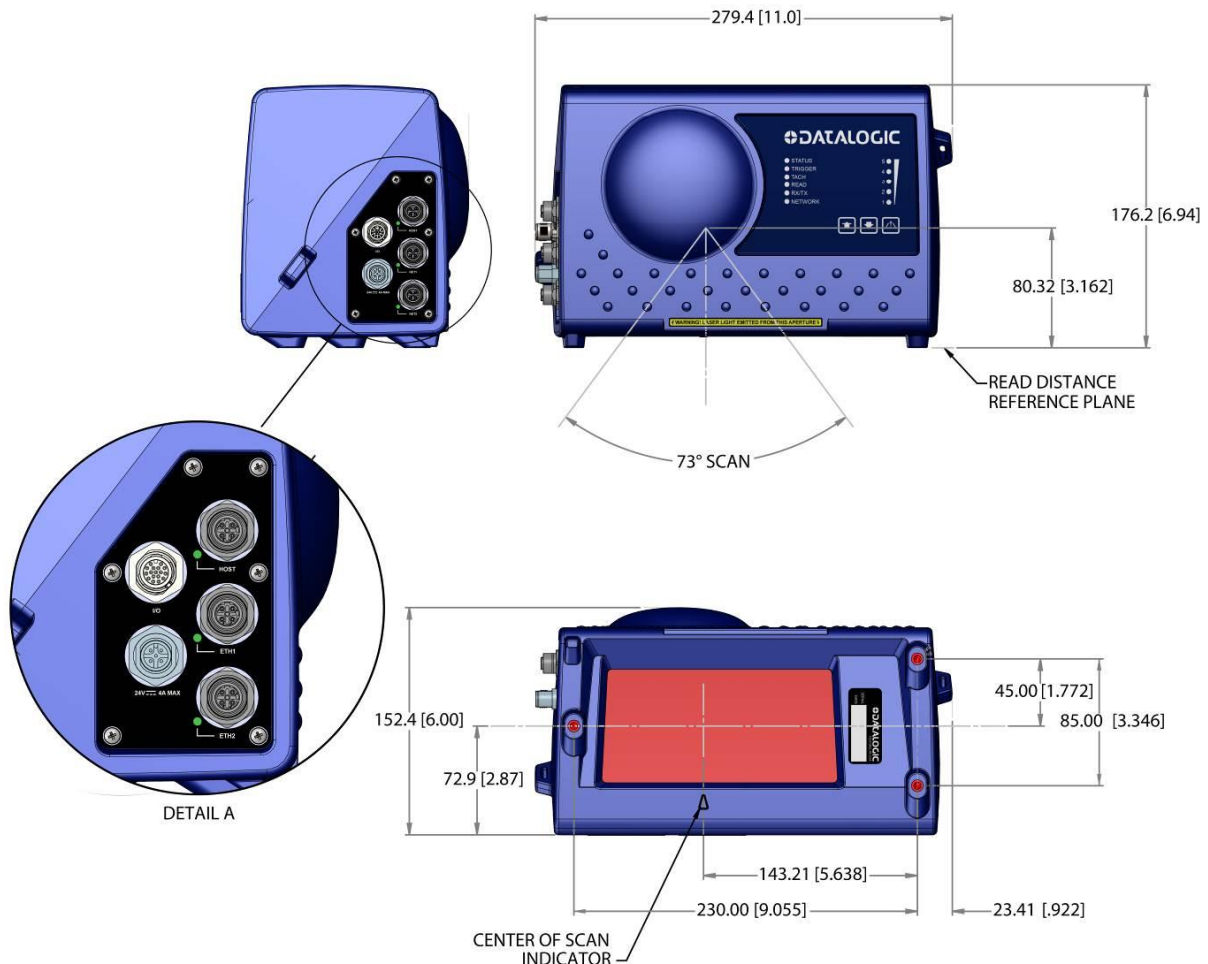


Figure 14: DM3610 Dimensions

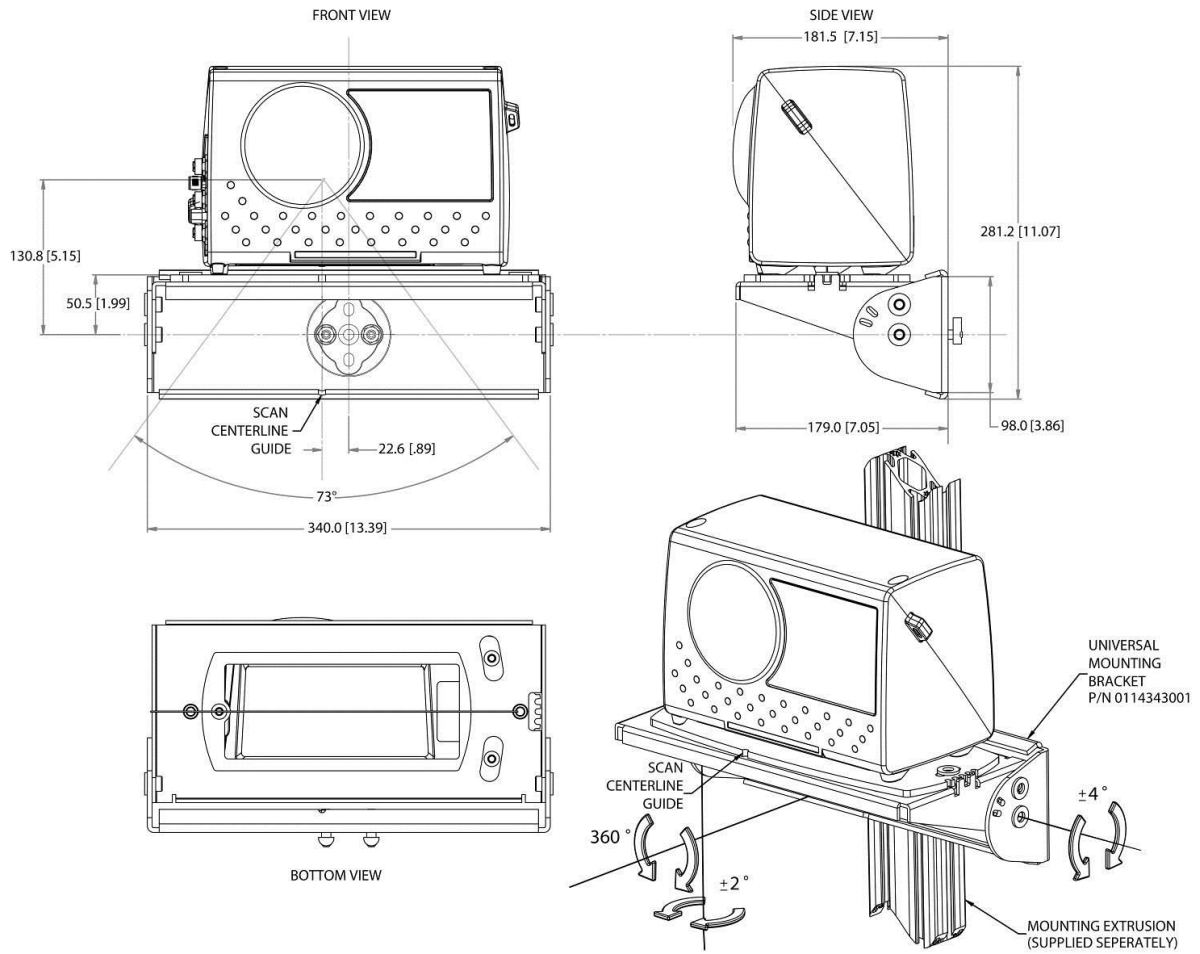


Figure 15: DM3610 Mounting Dimensions with UMB

2.4.7 Mounting the Dimensioners with the Universal Mounting Brackets (UMB)

The Universal Mounting Bracket (UMB) allows you to install and make fine adjustments to the position of the DM3610. The bracket assembly includes the UMB, UMB Mounting Plate, and UMB Mounting Disk.

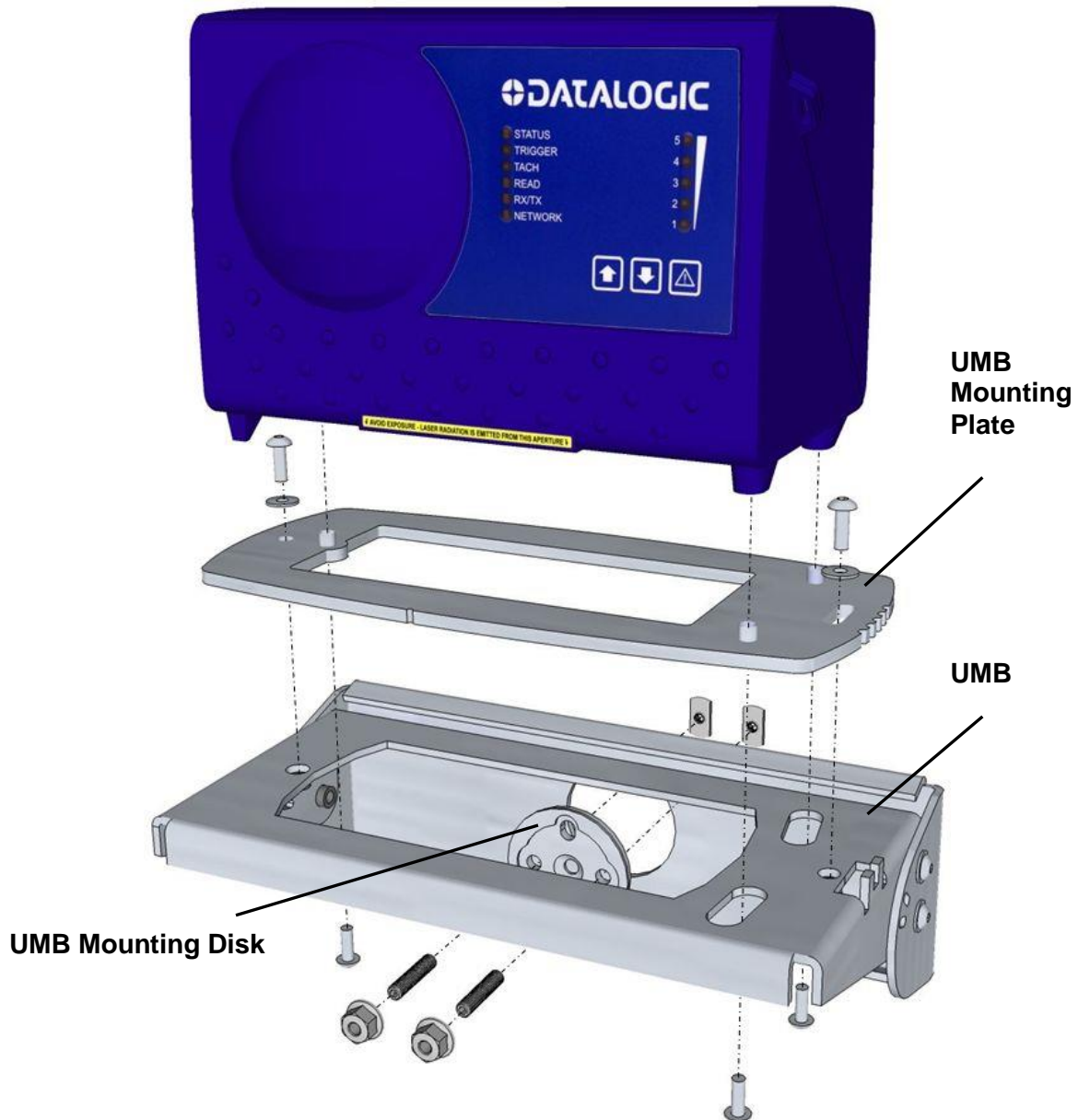


Figure 16: DM3610 and UMB Assembly

1. Mount the **UMB Mounting Plate** to the **UMB**, if it has not yet been attached.
2. Mount the **UMB** to the mounting structure using the **UMB Mounting Disk** and hardware provided. Hardware is provided for standard Bosch or 80/20 mounting structure extrusion.

2.4.8 Typical Two-Head Application Installations

You must mount the following components of the two-head dimensioning system before you power it on:

- Universal Mounting brackets and DM3610 dimensioners
- DC3000 Controller
- CBX510 Connection Box
- Tachometer (if used)
- Photoelectric Sensor (if used)



NOTE: A photoelectric sensor is typically used for singulated, non-touching applications. The photoelectric sensor is an object-sensing trigger device. A tachometer is used to measure conveyor speed. (*Your installation may use other devices.*) A photoelectric sensor is not required for applications unless your system requires a defined transmit point.

Two-Head Application

Typical two-head applications include two dimensioners positioned towards each side edge of the conveyor and angled in toward the center line of the conveyor. The dimensioners are offset along the X-axis to avoid cross interference of the laser lines.

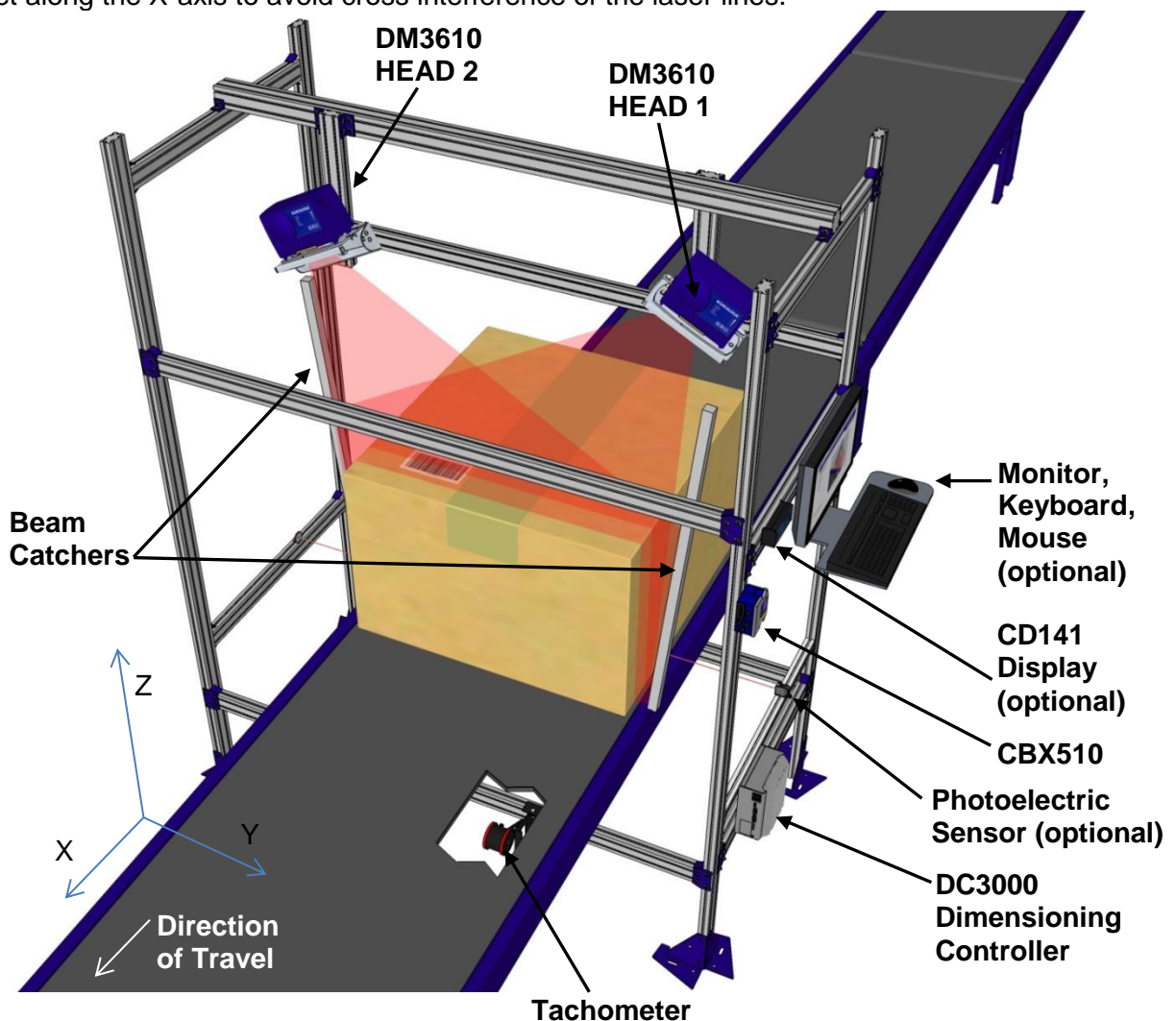


Figure 17: 2-Head Dimensioning System Installation – 3 QUARTER VIEW

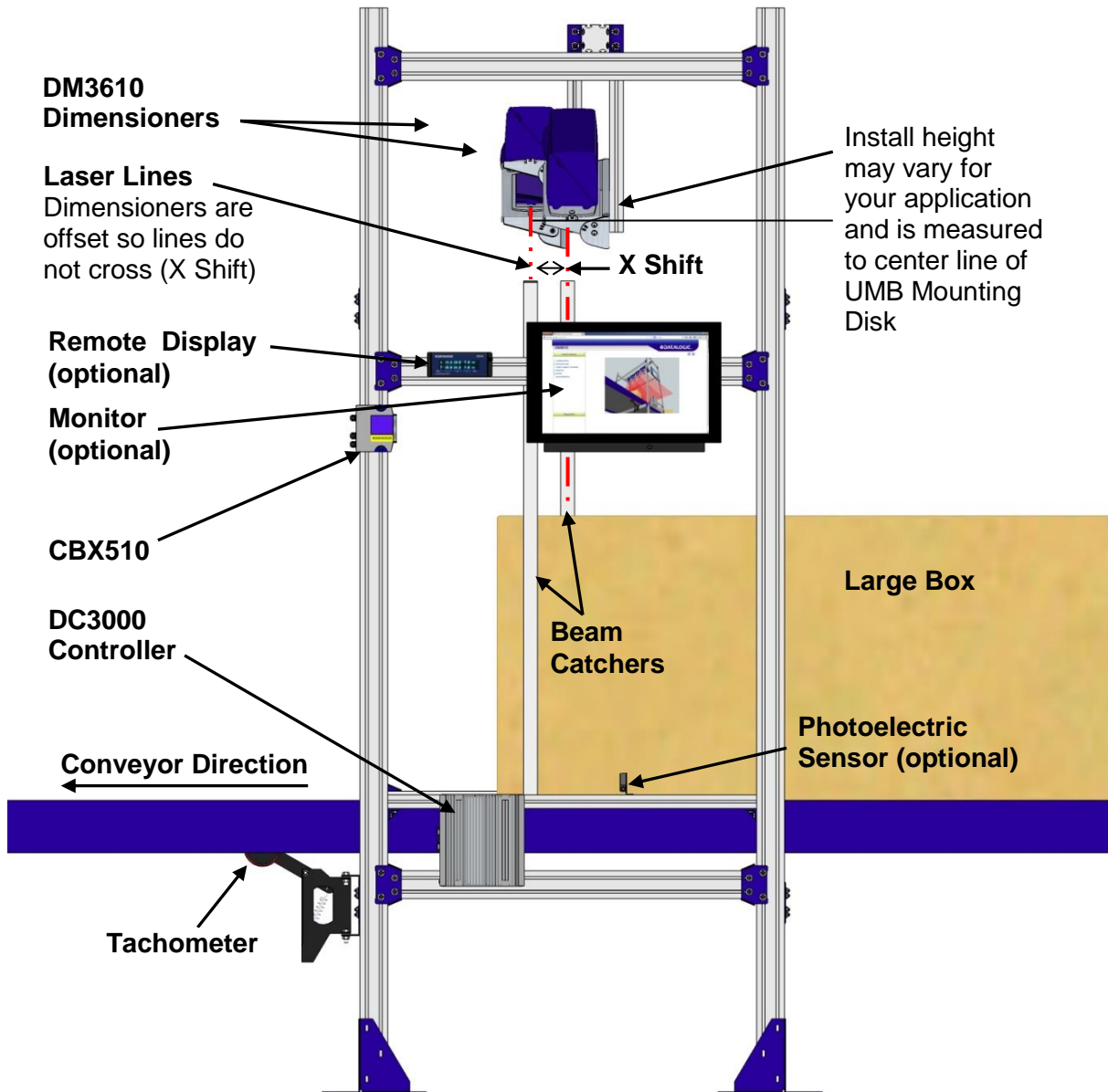


Figure 18: 2-Head Mounting Dimensions – SIDE VIEW

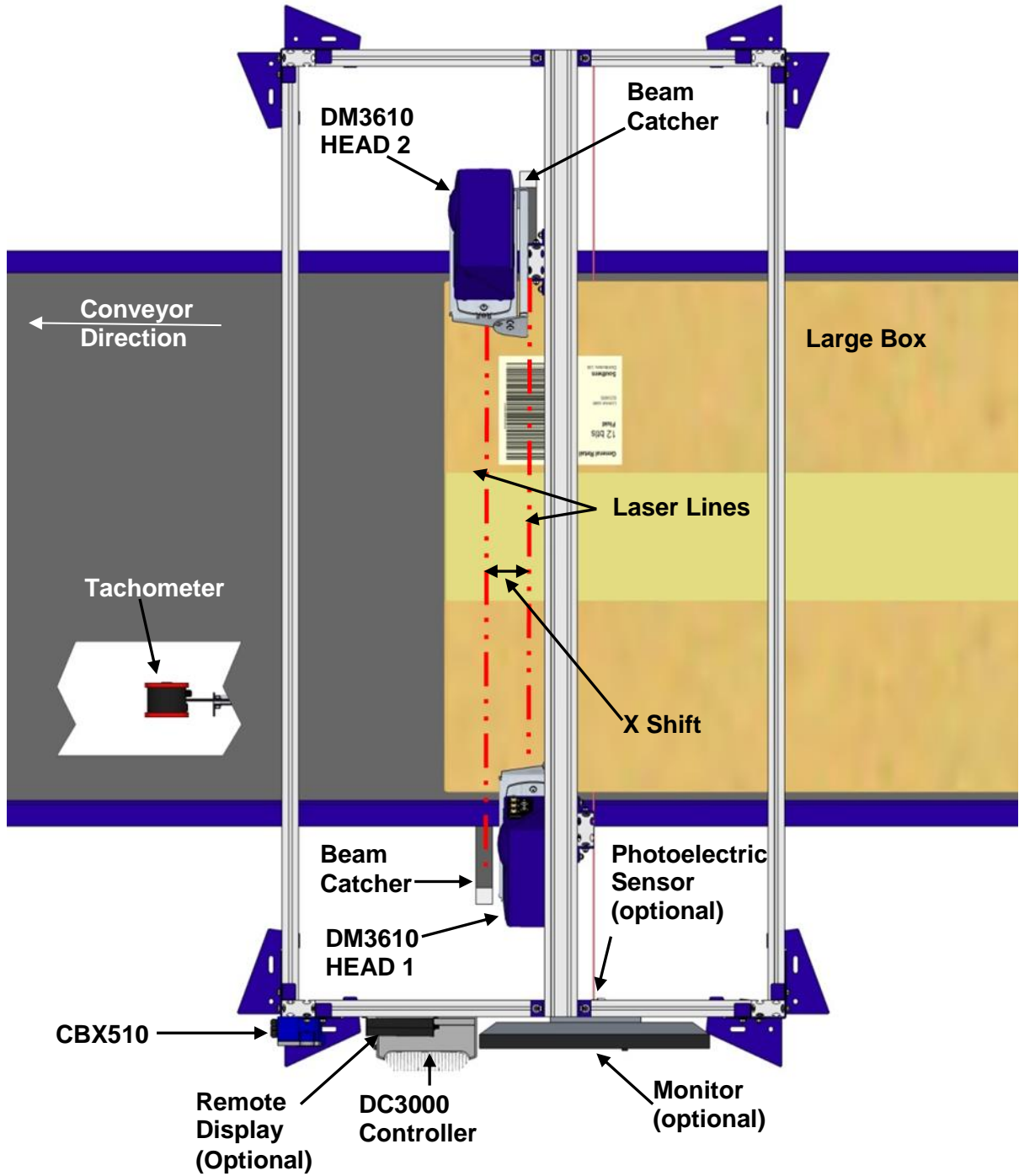


Figure 19: 2-Head Dimensioning System Installation - TOP VIEW

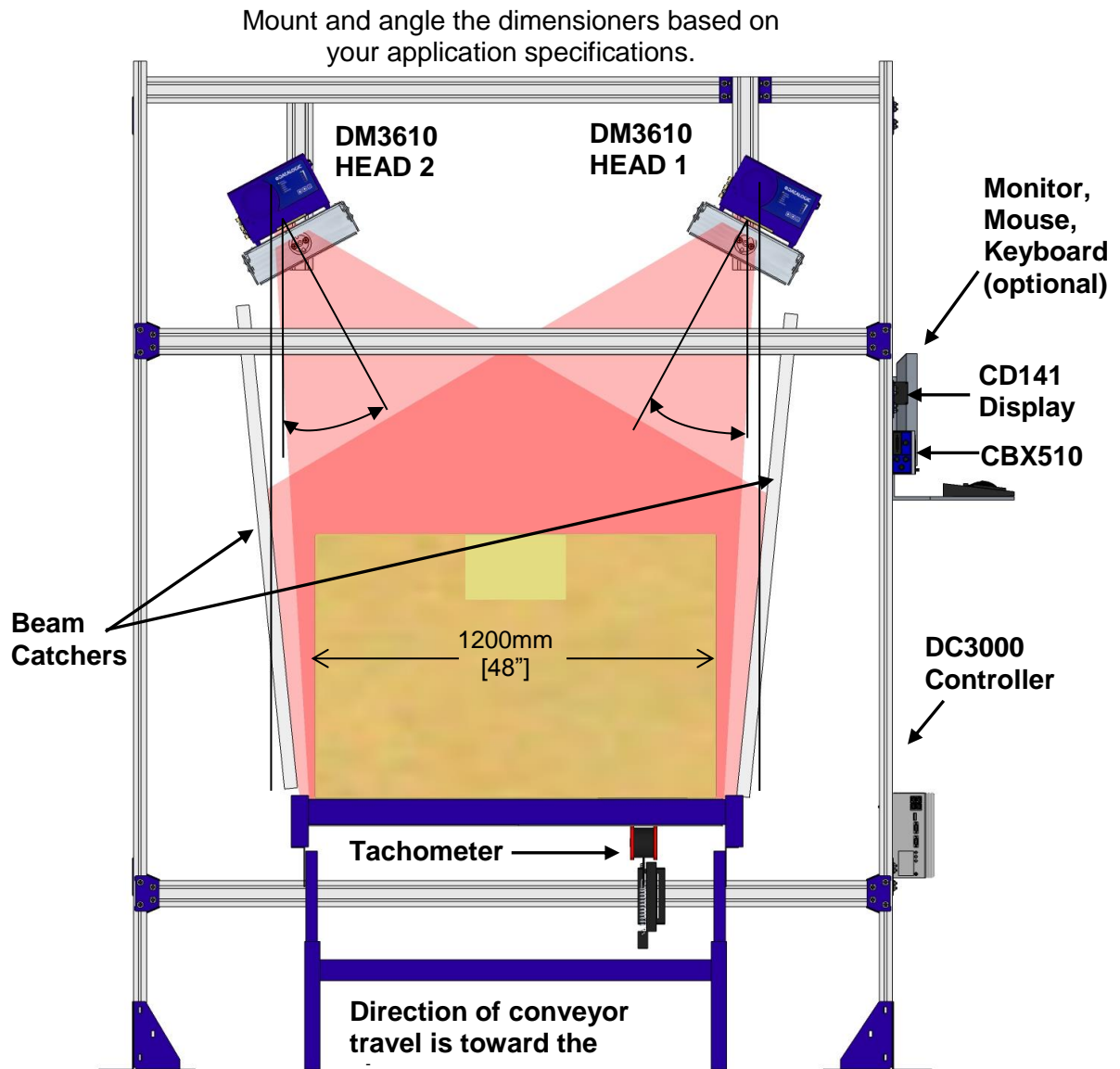


Figure 20: 2-Head Dimensioning System Installation – FRONT VIEW

2.4.9 Mounting Structure Assembly

When using the standard mounting structure provided by Datalogic, assemble as defined in the application information provided with the structure.



NOTE: This manual addresses standard two-head system installation. The information provided here may be superseded by any application specific drawings provided by Datalogic.



NOTE: Depending on your specific installation, beam catchers may be needed to avoid false dimensioning data points.

2.4.10 Prepare the Mounting Structure and Universal Mounting Brackets

1. In standard installations, the DM3610 Universal Mounting Bracket (UMB) is mounted to a short upright mounting support (from mounting structure extrusion).
2. Using a tape measure and marker or pencil, make an installation mark on each upright where the center of the Universal Mounting Bracket (UMB) mounting disks will be located. Base your installation marks on application drawings provided with your system if available.
3. If the UMB Mounting Plates are yet attached to the UMB for each dimensioner, attach them now with the screws provided.

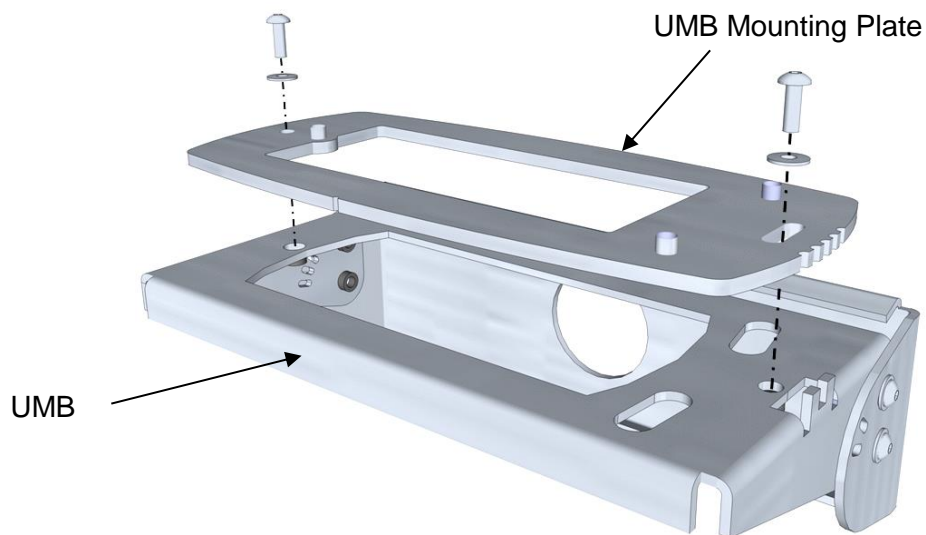


Figure 21: UMB Mounting Plate to UMB Assembly

2.4.11 Mounting the UMBs

1. Position the extrusion to which UMBs will be mounted based on your application drawings.
2. Since applications may vary, the correct mounting position and angle are defined in the application mounting structure drawing. Identify the correct location on the structure and mark the position of the UMB.
3. The UMBs are fastened to the mounting structure with the UMB Mounting Disks, threaded inserts, set screws, and matching nuts. Place the threaded inserts into the mounting extrusion tracks one at a time and secure them at the mounting mark with the set screws provided.



NOTE: The UMB Mounting Disks are designed for installation to the T-slots of both Bosch Rexroth (40 and 45 Series) and 80/20® 1.5in aluminum extrusion.



NOTE: These threaded inserts are what holds the UMB in position, and once tightened down, should not be touched during the alignment process.

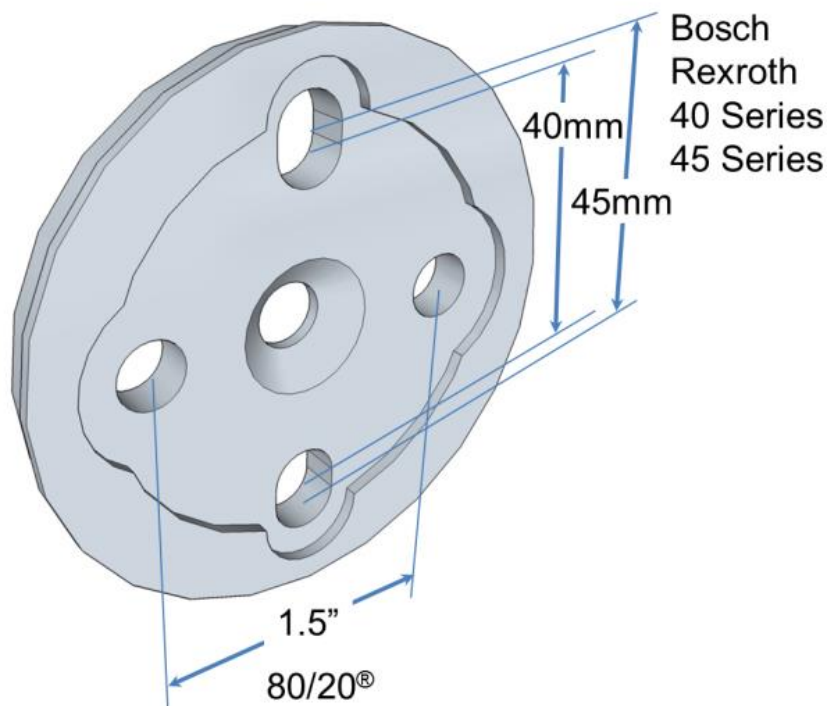


Figure 22: UMB Mounting Disk Versatility

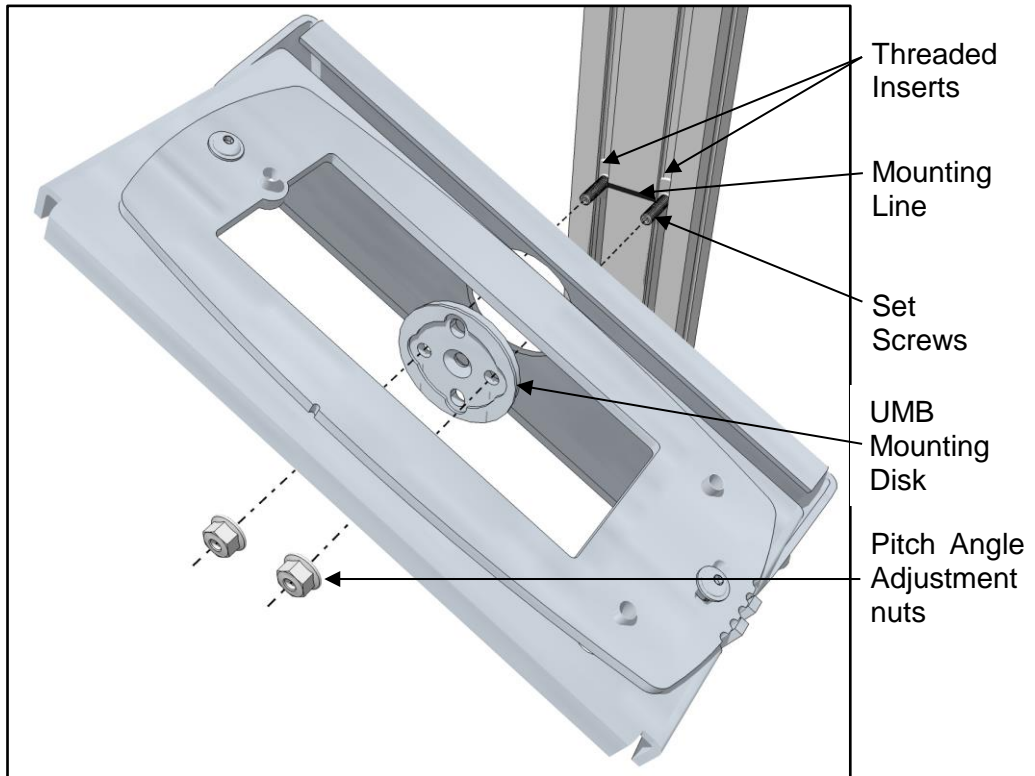


Figure 23: Securing the UMB to the structure

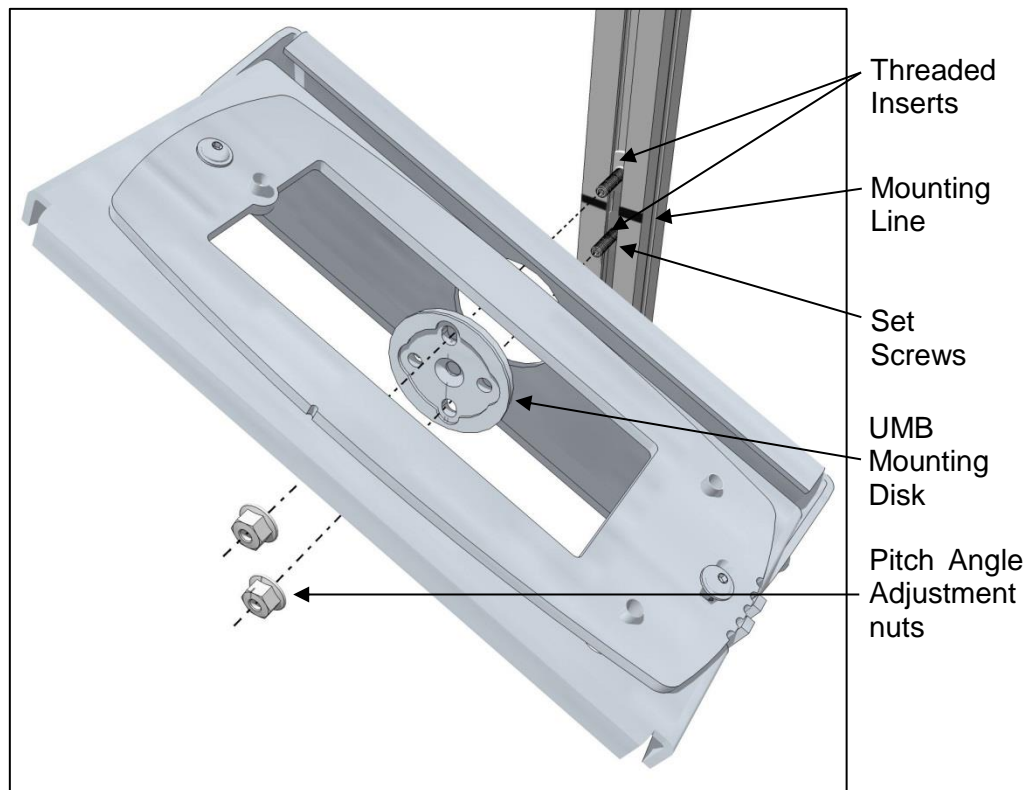
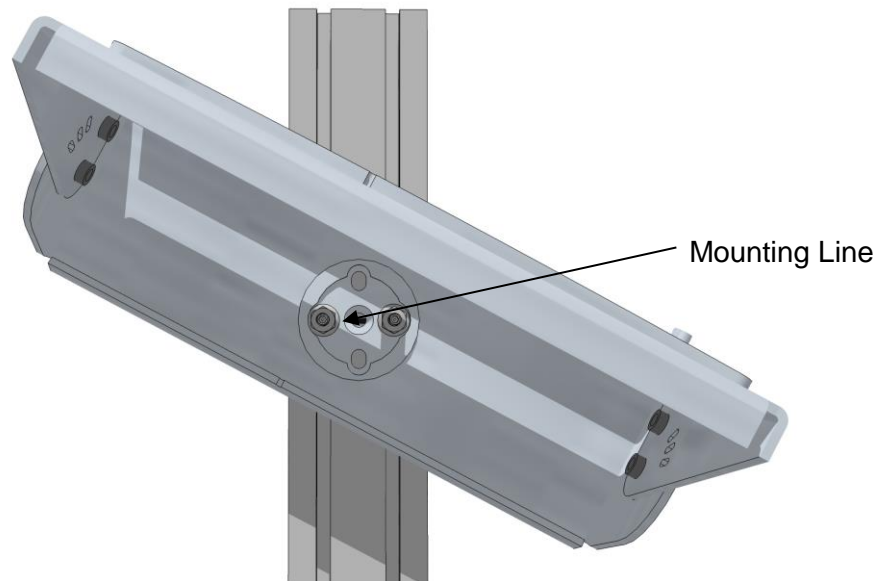


Figure 24: Securing the UMB to the structure (Alternate)

- Adjust the UMB so that the installation mark is at the center slot of the UMB Mounting Disk, and then secure the mounting disk and bracket with the pitch angle adjustment nuts.



4.

Figure 25: Aligning the UMB with the installation mark



NOTE: DO NOT over-tighten hardware that holds the UMB in-place.

- Using a digital level or other angle finding device, adjust the degree of pitch angle of each UMB based on the application drawing for your system. The laser should angle in toward the conveyor. The angle may need to be adjusted based on your application specifications and during the calibration process.

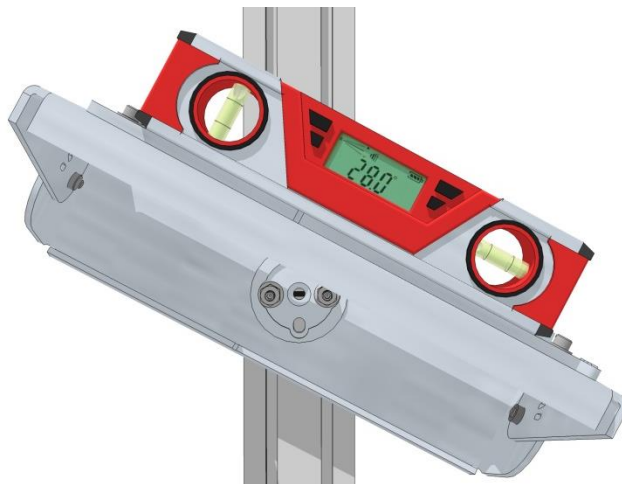


Figure 26: Adjusting the pitch angle

- Slightly loosen the nuts on the UMB Mounting Disk on the UMB to adjust the pitch angle.



NOTE: Take care to only loosen the nuts and not the two set screws that anchor the UMB to the mounting structure

2.4.12 Pre-Configuring the DM3610 Dimensioners

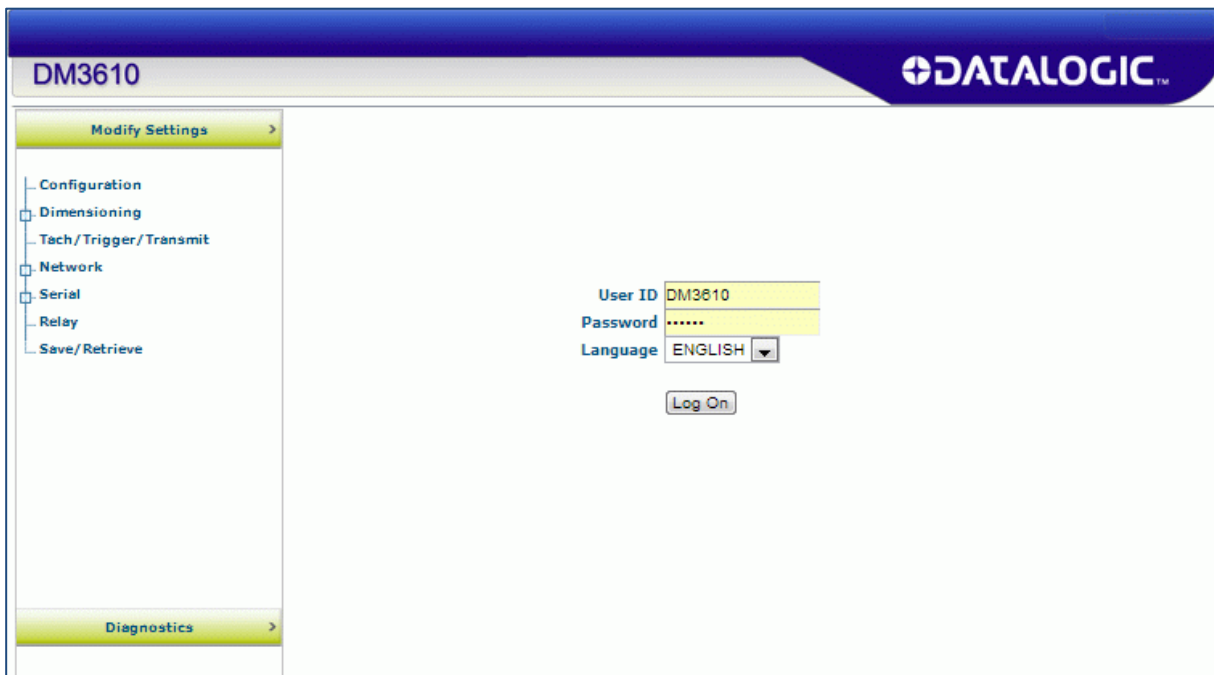
When preparing the DM3610 dimensioners for a multi-head dimensioning system, several parameters must be changed, including the default IP address. All DM3610 dimensioners are defaulted to an IP address of 198.168.3.100. Since your multi-head dimensioning system will have more than one dimensioner, the IP addresses must be changed before connecting to the network to avoid IP address conflicts. Each DM3610 must have a unique IP address. Also, in a multi-head system, dimensioners are numbered from left to right. The left most head facing downstream is named **HEAD1**, followed by **HEAD2**, and etc.

To change the DM3610 parameters and mount the dimensioner (repeat for each system dimensioner):

1. Plug the dimensioners in using the power supplies provided.
2. You must configure your PC's IP Address to be in the same network as the DM3610's IP Address (example: 192.168.3.1). Set the Netmask to 255.255.255.0 and the Gateway to 0.0.0.0.

Connect your laptop computer to the DM3610 HOST port using either the CAB-ETH-M0x M12-IP67 ETHERNET CABLE or CBL-1534-0.2 ADAPT.CABLE ETH M12-TO-RJ45F.

3. Open a browser on the laptop computer, and type in the default IP address of 198.168.3.100. The **DM3610 User Interface** opens in the browser window.



NOTE: Details on using the DM3610 User Interface are available in the *DM3610 Dimensioner Reference Manual, Chapter 4*.

4. Log on to the user interface. The default User ID is DM3610, and default Password is DM3610.

5. From the menu tree under **Modify Settings**, select **Configuration**. The **Configuration window** opens.

Dimensioner Information	
Dimensioner Name	HEAD 1
Dimensioner Model	DM3610-3200 MULTI HEAD OI/ML/MI
Serial Number	A13F00135
Software Name/Revision	DM3610_RELEASE 1.6(19)
DSP Software Name/Revision	DM3610_DSP 1.5(2)
FPGA Device Id/Revision	0x3c40 3.5(0)
LFT Library Name/Revision	DM3610_LFT 1.5(2)
	2ED5F1A33D0D50CE8919FF11D58263A7
	060ECB51C9D955E6B4A948D081BBD2C8
	B446D385DF0F114E50BD688B2ED583C3

Configuration Options	Control Panel Options
Units: METRIC	<input checked="" type="checkbox"/> Enable Control Panel Buttons
	Network Access Options
	Username: DM3610
	New Password:
	Confirm Password:

Update Reset

6. Confirm the following items:
- Dimensioner Model should be **MULTI HEAD**
 - Software revision should be **1.6(19)** or GREATER.
7. Enter a unique name for the dimensioner in the **Dimensioner Name** field. The master DM3610 should be named “**HEAD1**” (this dimensioner will be mounted to the left looking downstream), the next DM3610 “**HEAD2**,” and etc.
8. Click **Update**.
9. From the menu tree under **Modify Settings**, select **Dimensioning | Settings**. The **Dimensioning | Settings** window opens.

Outputs	
DIM-in-Head Enabled	Off
Certification Mode	Off

Update Reset

10. Make sure **DIM-in-Head Enabled** is set to **Off**, and **Certification Mode** is set to **Off**.



IMPORTANT: You must turn Certification Mode back on after calibration is completed if this is a Legal-for-Trade system

11. Click **Update**.

12. In the tree menu under **Modify Settings**, select **Tach/Trigger/Transmit**. The **Tach/Trigger/Transmit** window opens.
13. Set the **Tach Source** to **Hardware/External**.
14. Set the **Pulses per in [cm]** to match the application tachometer setting.
15. Set the **Trigger Source** to **Continuous Trigger**.
16. Set the **Transmit Type** to **Continuous Scans**.

The screenshot shows the 'Tach/Trigger/Transmit' settings window. It is organized into three main sections:

- Tachometer:** Contains five settings: 'Tach Source' (dropdown menu set to 'Hardware/External'), 'Pulse per in' (text input field with '16.00'), 'Tach Scale Factor' (text input field with '1.000'), 'Tach Controlled Laser' (checkbox, unchecked), and 'Tach Master' (checkbox, checked).
- Trigger:** Contains one setting: 'Trigger Source' (dropdown menu set to 'Continuous Trigger').
- Transmit:** Contains one setting: 'Transmit Type' (dropdown menu set to 'Continuous Scans').

At the bottom right of the window, there are two buttons: 'Update' and 'Reset'.

17. **(FOR HEAD1 ONLY)** Select the **Tach Master** check box to make this DM3610 the system master dimensioner.
18. Click **Update**.

19. In the tree menu under **Modify Settings**, select **Network | Settings**. The **Network Settings** window opens.

The screenshot shows the Network Settings window with the following configurations:

- IP Address 1:** 192, 168, 3, 101
- Net Mask 1:** 255, 255, 255, 0
- Gateway IP Address:** 0, 0, 0, 0
- Enable IP Address 2
- IP Address 2:** 0, 0, 0, 0
- Net Mask 2:** 255, 255, 255, 0
- Net Host Connection 1:** Connection Type: TCP/IP Server, Message Format: Standard Message, Port: 3001
- Net Host Connection 2:** Connection Type: TCP/IP Server, Message Format: Standard Message, Port: 3002
- Telnet Port:** 23
- Data Transmit:** 192, 168, 3, 70, 10001

Buttons: Update, Reset

20. Adjust the parameters for each head as shown in the table below. Click **Update** to save the parameters.

Dimensioner Name	HEAD1	HEAD2
IP Address 1	192.168.3.101	192.168.3.102
Net Mask 1	255.255.255.0	255.255.255.0
Data Transmit IP Address	192.168.3.70	192.168.3.70
Data Transmit Port	10001	10002
Tach Master Checkbox (Tach sync source)	HEAD1 is always the master, and this selection is found in Modify Settings Tach/Trigger/Transmit.	

21. In the tree menu under **Modify Settings**, select **Serial | Port 1**. The **Serial | Port 1** window opens.

Baud Rate

600 19200
 1200 38400
 2400 57600
 4800 115200
 9600

Data Bits

7 Bits
 8 Bits

Stop Bits

1 Bits
 2 Bits

Parity

None
 Even
 Odd

Mode

RS232 Direct
 RS232 Backup Module

Message Format

Legal for Trade Display External display device for Certified dimensioning

Update Reset

22. Under **Mode**, select **RS232 Direct**.
23. Under **Message Format**, select the **Legal for Trade Display** from the drop-down list.
24. Click **Update**.
25. In the tree menu under **Modify Settings**, select **Relay**. The **Relay** window opens.

AUX IN Configuration

Used as input Active High

Update Reset

26. From the drop-down list, select **Active High** or **Active Low** to match the polarity of your hardware trigger (Photoelectric Sensor) if the system uses one.
27. Click **Update**.
28. Power down the DM3610. **Repeat the previous configuration steps for each dimensioner in the system.**

2.4.13 Install the DM3610 Dimensioners

1. When each of the DM3610 dimensioners in the system has been configured, mount the dimensioners to the **UMB Mounting Plate** of their **UMB**. Start by mounting HEAD1 on the left (looking downstream), and then mount the next dimensioner to the right.

Set the DM3610 dimensioners on top of each UMB assembly, placing the feet of the DM3610s over the positioning posts on the UMB Mounting Plate.

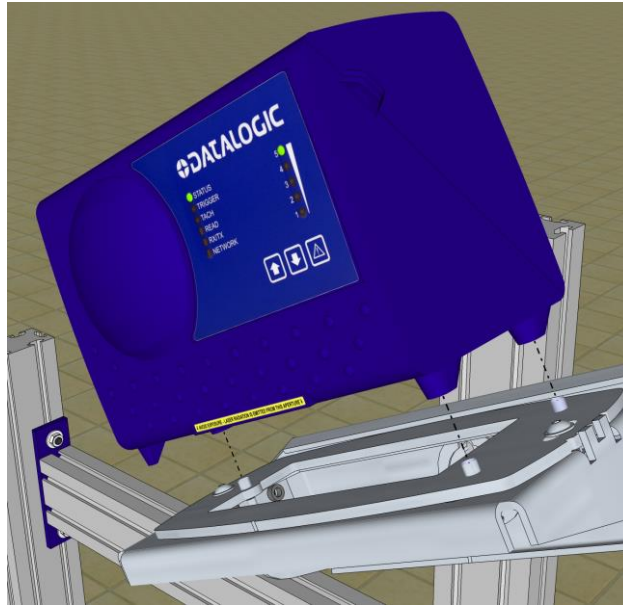


Figure 27: Placing the DM3610 on the positioning posts of the UMB Mounting Plate

2. Secure the DM3610 with the three mounting screws provided. The mounting screws pass through the positioning posts and into the feet of the DM3610.

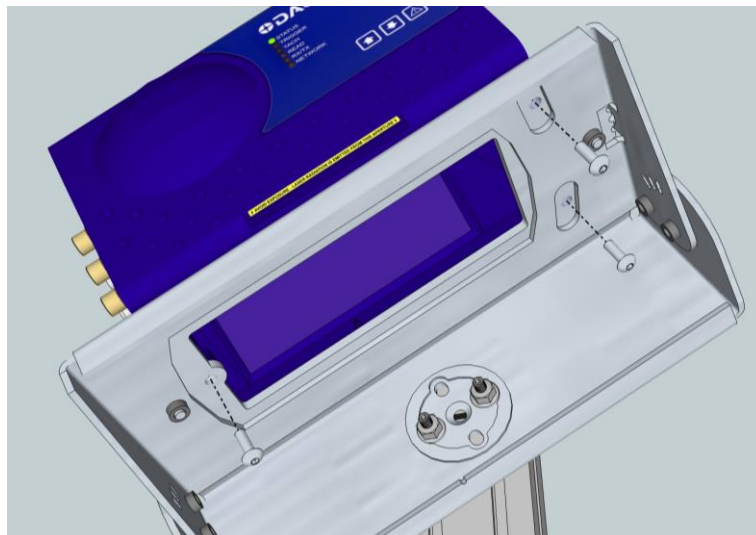


Figure 28: Securing the DM3610



NOTE: When viewing downstream, in standard configuration the connector panel will be facing to the RIGHT side of the conveyor.

2.4.14 Mounting the DC3000 Dimensioning Controller

Mount the Controller firmly to the mounting structure with T-bolts.

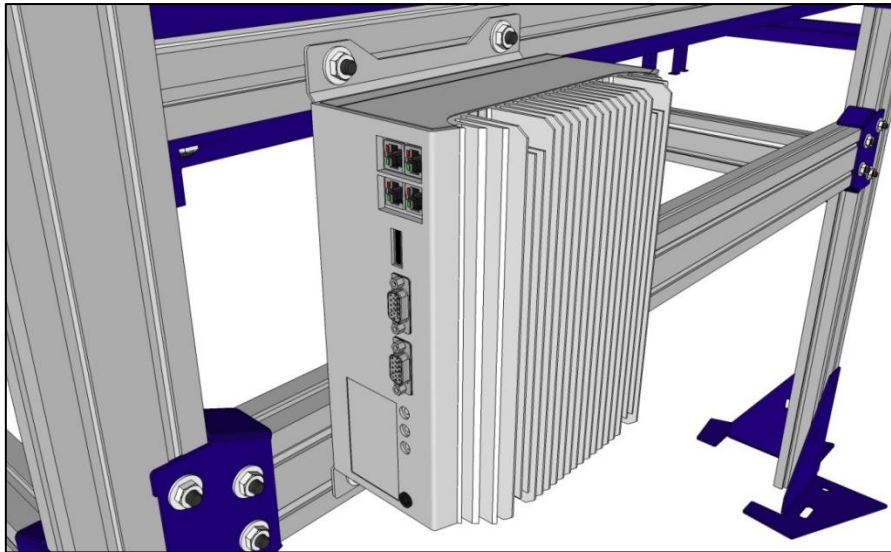


Figure 29: Mounting the DC3000 Dimensioning Controller

2.4.15 Mounting the CBX Connection Box

CBX Series industrial connection boxes can be used to connect the DM3610 dimensioners to the external peripherals.

Mount the CBX510 to the mounting structure in a location to facilitate easy access to wiring. Secure the CBX510 with the bolts and drop-in T-nuts provided.

When mounting CBX510 to a fixed surface, the stencil include in the package can be used to drill the appropriate mounting holes.

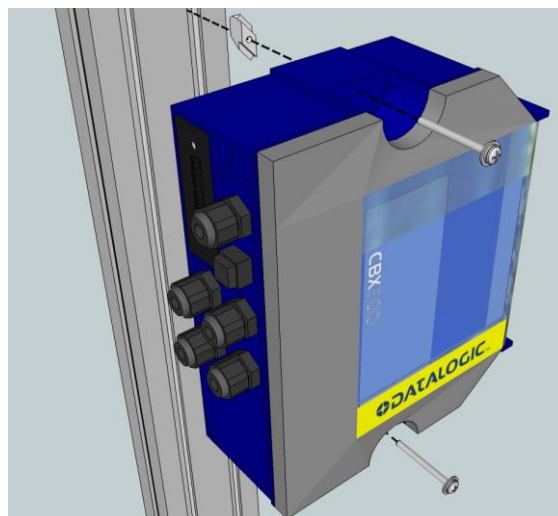


Figure 30: Mounting the CBX Connection Box

2.4.16 Mounting the Datalogic Photoelectric Sensor (optional)

The standard hardware trigger is a Datalogic photoelectric sensor. It works by emitting a light beam that is returned by a simple reflector. When a package breaks the path of light, the trigger signal is activated.

In order for photoelectric sensor to work properly, make sure the following things are done when mounting the trigger photoelectric sensor.

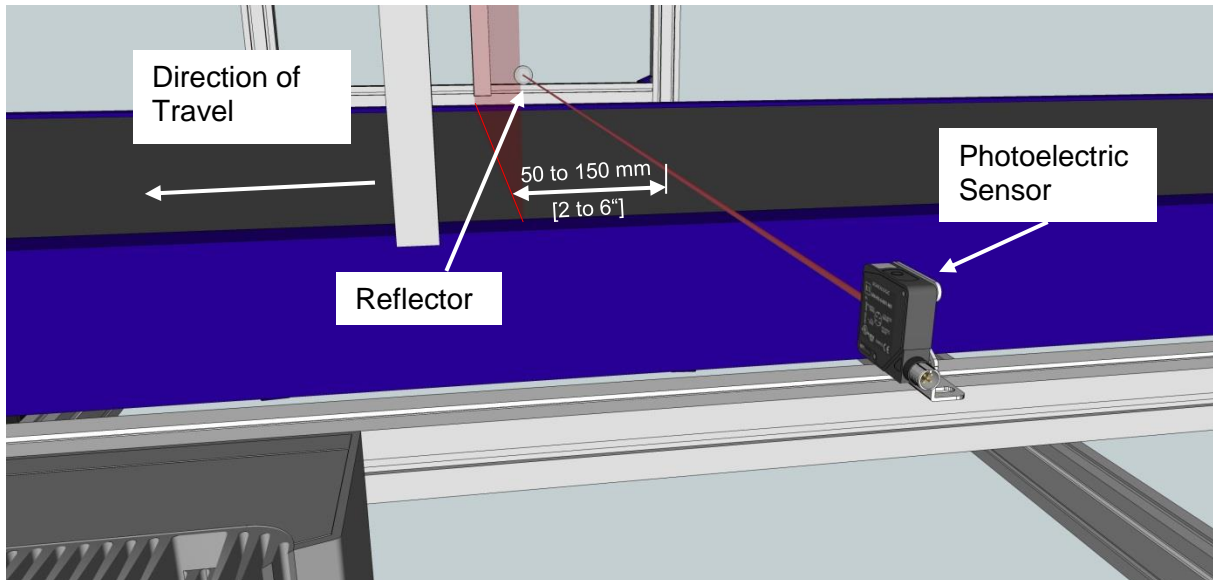


Figure 31: Mounting the Photoelectric Sensor



NOTE: Mounting supports may differ from the extrusion shown in the image above.

- Mount the photoelectric sensor so it is parallel to and 50 to 150mm [2 to 6] inches upstream from the DM3610 laser.



NOTE: The distance from the photoelectric sensor to the DM3610 laser line must be entered in the **Modify Settings | Tach/Trigger/Transmit** window of the User Interface in the **Trigger Reference Point** text field. See *chapter 4, User Interface*.

- Mount the reflector directly opposite the emitter on the other side of the conveyor.
- The emitter must be mounted so the light exit window is perpendicular to the conveyor, facing the reflector.
- Mount the reflector perpendicular to the conveyor, facing the emitter.

2.4.17 Mounting the Tachometer

The tachometer outputs a set number of pulses for each wheel rotation. This tells the DM3610 the precise conveyor speed, allowing it to determine the exact package position. Because the exact layout of many conveyors is unique, it is impossible to give exact directions for tachometer mounting. Follow the guidelines below as closely as possible:

- Mount tachometer on the conveyor section where dimensioning is performed.
- Mount tachometer on the underside of the conveyor, away from areas where the conveyor bows downward. A good place to mount the tachometer is on one end of the conveyor, close to the drive shaft.
- Make sure tachometer assembly angles in the same direction that the underside of the conveyor travels.
- The tachometer must make good contact with the conveyor.
- The anti-static brush provided with the tachometer must be installed to assure proper operation.
- Use the tachometer mounting kit to make tachometer mounting and setup easier.

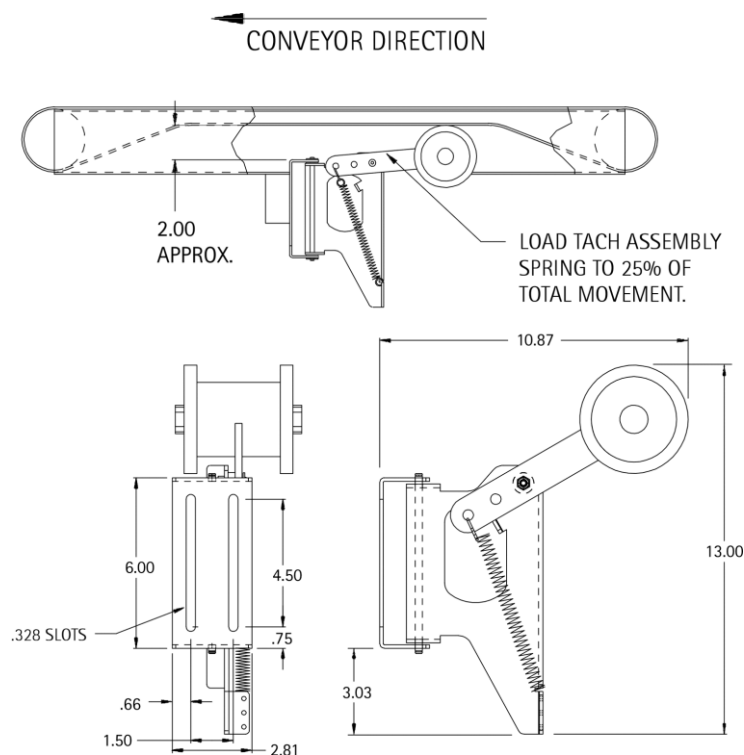


Figure 32: Tachometer Mounting Kit Installation

2.4.18 Mounting the Power Supplies

Mount the each power supplies on the structure where its cables can reach both the DM3610 and a power source. Secure the power supply to the mounting structure using the supplied hex screws and drop-in T-nuts as shown below.

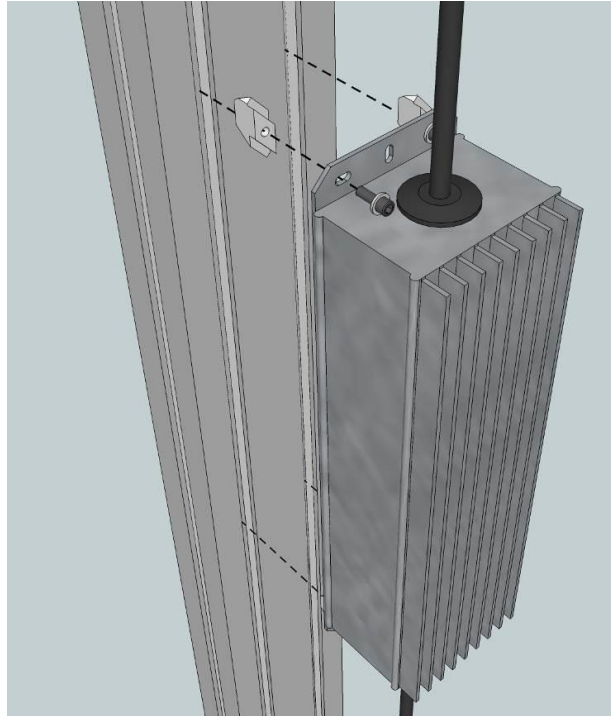


Figure 33: Securing the power supply to the mounting structure.

2.4.19 Install the CD141 Display (optional)

Mount the 40-character display to a structure crosspiece with the hardware provided. Be sure to mount the display where it will be easily readable.

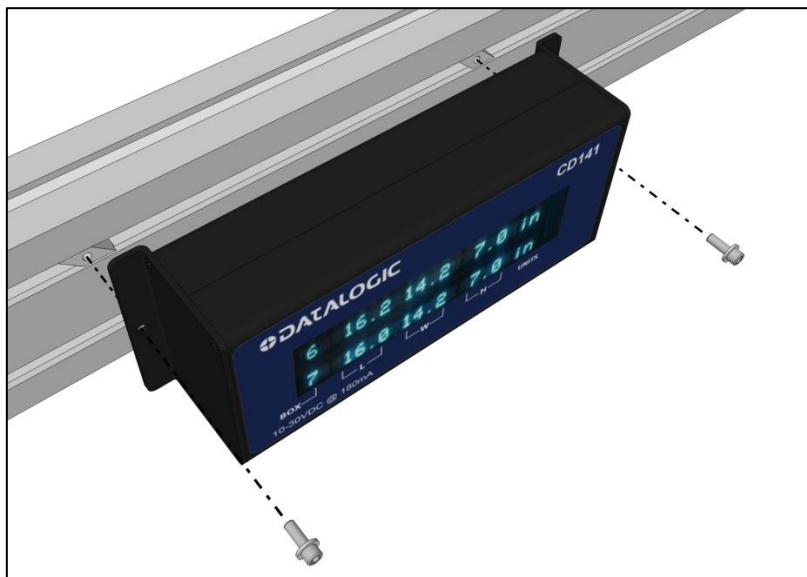


Figure 34: Securing the CD141

2.4.20 Connect Communication and Power Cables to the Installation



WARNING: DO NOT connect the power supply to a power source until after all wiring connections have been made to the DM3610, DC3000 and CBX510.

Connect all communication cabling for the two-head system as explained in *chapter 3, Electrical Installation*, including:

- Communications and power supply connections to the DM3610



Figure 35: Connections to the DM3610 Connector Panel

- Ethernet connection to the DC3000 Controller
- Connections to the CBX510 connection box
 - Connections to a photoelectric sensor
 - Connections to a tachometer
 - Connections to a remote display
 - Serial communication (if used)

After the communications cables have been connected, connect the power supply cables to the DM3610s, and then attach the power supply to a power source.



NOTE: For information on setting up network or serial communication parameters, see *chapter 4, User Interface*.

2.5 CALIBRATION AND SETUP

After the DM3610 dimensioners have been installed, they must be calibrated and configured for precise package dimensioning. See *chapter 5*, for complete procedures for calibrating the system.

3 ELECTRICAL INSTALLATION



WARNING: Electrical Installation must be performed by a Qualified Service Technicians Only! A trained technician must perform any procedures involving potential exposure to high voltage electricity. Do not attempt to perform any electrical installation procedures unless you are a trained technician.



IMPORTANT: This equipment contains electronics that may be affected by electrostatic discharge (ESD). To prevent personal injury or damage to the unit, please follow the safety precautions and warnings found in the Introduction to this manual. Failure to follow these precautions may void your warranty.

3.1 PREPARING FOR ELECTRICAL INSTALLATION

Before mounting any components, please do the following:

- Read all instructions before beginning your installation.
- Observe all electrical safety requirements discussed in the Introduction to this manual.
- Define and confirm the accuracy of your application's requirements.
- Review all installation-specific drawings.
- Review and plan the power requirements for your application.
- Review and plan the communications requirements for your application.



IMPORTANT: The content of this manual may be superseded by any customer-specific documentation provided by Datalogic. Before proceeding with any installation procedures, be sure to review ALL documentation, especially content that contains details specific to your installation.

3.2 INSTALLATION SEQUENCE



NOTE: Everything should be **MECHANICALLY INSTALLED** before performing any **ELECTRICAL INSTALLATION**. See *chapter 2* for *mechanical installation details*.

Most DM3610 applications are shipped with the CBX100 connection box and all the necessary cabling required to electrically install the system. If your system requires custom-length cables or other special wiring, documentation specific to these requirements has been provided in your shipment. This special documentation supersedes any contradictory content in this manual.



NOTE: To reduce the possibility of damage to the unit, check all cabling between the DM3610 and other devices for accuracy.

3.2.1 Connecting a DM3610-3100/3200/3300 Singulated, non-touching

To install a two-head dimensioning system, follow this sequence:

- Complete mechanical installation (*See chapter 2.*)
- Complete electrical installation.
(See wiring illustrations provided in this chapter.)
- Observe all electrical safety requirements outlined in this chapter.
- Ground the mounting structure to protective earth (PE) ground.
- If used, wire the photoelectric sensor (or other trigger) to the CBX connection box.
- Wire the tachometer to the CBX connection box (if used).
- Wire serial ports to the CBX connection box if needed.
- Connect the dimensioner cabling to the CBX connection box and DC3000 Controller as required by your application.
- Wire the monitor to the CBX connection box.
- Connect the power supplies to the equipment.
- Connect the power supply to the power source.
- Setup / check dimensioning system operations (*See chapter 5.*)

3.3 GENERAL ELECTRICAL INSTALLATION GUIDELINES AND PRECAUTIONS

It is important that you follow these general precautions when installing, setting up, operating, maintaining, troubleshooting or replacing any Datalogic products, parts or related equipment. As you plan and install your two-head dimensioning system, be sure to keep the following guidelines in mind:

- Determine the dimensioners are in the proper locations according to your application drawings.
- Leave adequate clearances (approximately 300 mm [12 inches]) around the dimensioners and DC3000 Dimensioning Controller for wiring.
- Route wires carefully to reduce or minimize electrical noise.
- When power and communication wiring must cross, make their intersection perpendicular. Avoid running power and data wiring parallel to each other. If possible, maintain one of the following separations between the power and data wiring:
 - 300 mm [12 inch] gap
 - use steel conduit and 25 mm [1 inch] gap
 - 6.5 mm [0.25 inch] of aluminum.



IMPORTANT: When planning your installation wiring, remember all power connections must be quick-disconnect. For **PERMANENTLY CONNECTED EQUIPMENT** a readily accessible disconnect device must be incorporated in the building installation wiring. For **PLUGGABLE EQUIPMENT** the socket-outlet must be installed near the equipment and must be easily accessible.



WARNING: To assure no ESD damage will occur, be sure to observe the precautions outlined in the Introduction to this manual.



IMPORTANT: Ground the mounting structure to safety ground (protective earth ground (PE)). See wiring recommendations for safety ground.

3.5 POWER CONNECTIONS



IMPORTANT: When planning your installation wiring, remember all power connections must be quick-disconnect.



CAUTION: While performing the following wiring connection procedures, be sure to follow all safety procedures regarding high-voltage as outlined in the Introduction to this manual. No power should be applied to any device until all wiring is completed and checked for accuracy.



IMPORTANT: The socket-outlet must be installed near the DM3610. The outlet must be a readily accessible disconnect device.



Ground the DM3610 to safety ground (protective earth ground (PE)). See wiring recommendations for safety ground.

The CBX510 connection box provides flexible connectivity to a range of I/O devices as well as serial hosting. The Master DM3610 connects to the CBX510 via its I/O port using a single 17-pin M12 to 25-pin D cable.

The following block diagrams show interconnections for 2-head dimensioning system.

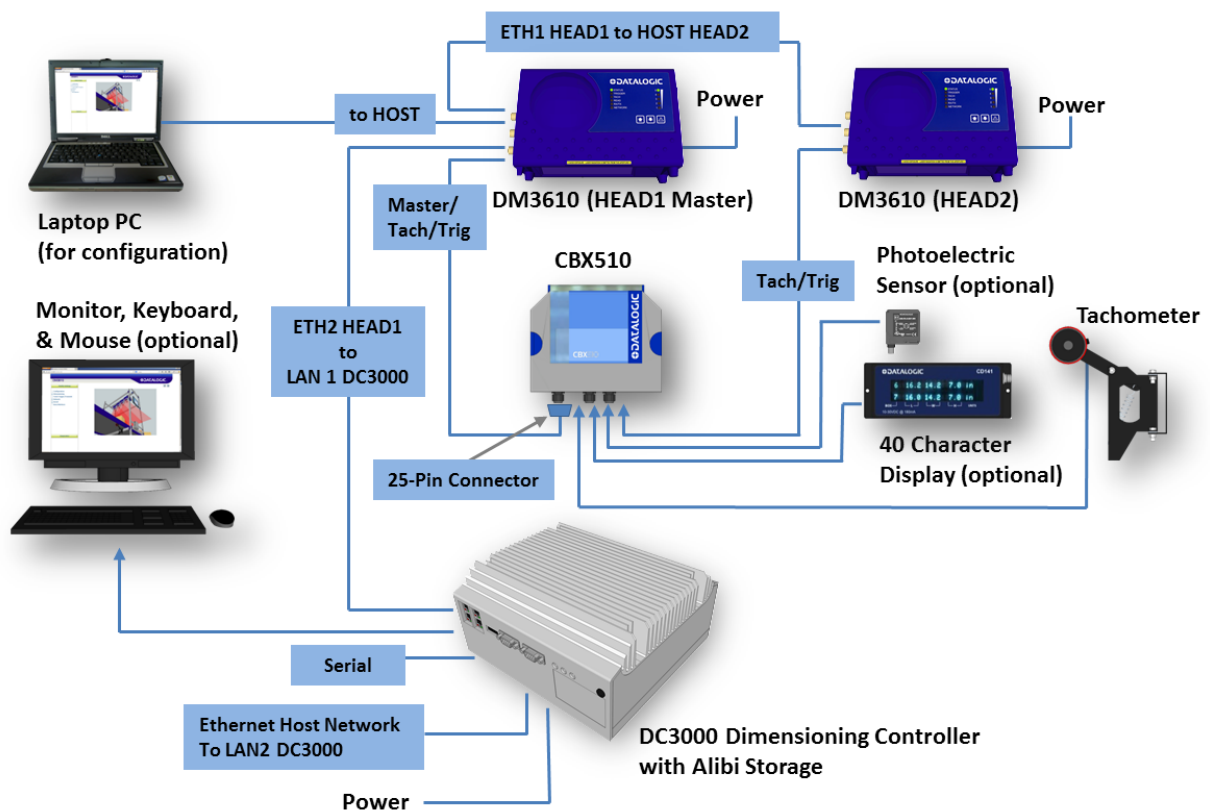


Figure 36: Wiring Block Diagram

The system requires a CBX510 Connection Box and DC3000 Controller. The CBX510 provides easy wiring to tachometer and triggers, while the DC3000 Controller provides connections to the Host network. The DC3000 Controller also includes the User Interface and backup/Alibi storage.

3.6 CBX510 CONNECTION BOX

Complete installation information for the connection box is available in the *CBX510 Installation Manual* available at www.datalogic.com. A simple drawing of the interior of the box is shown below.

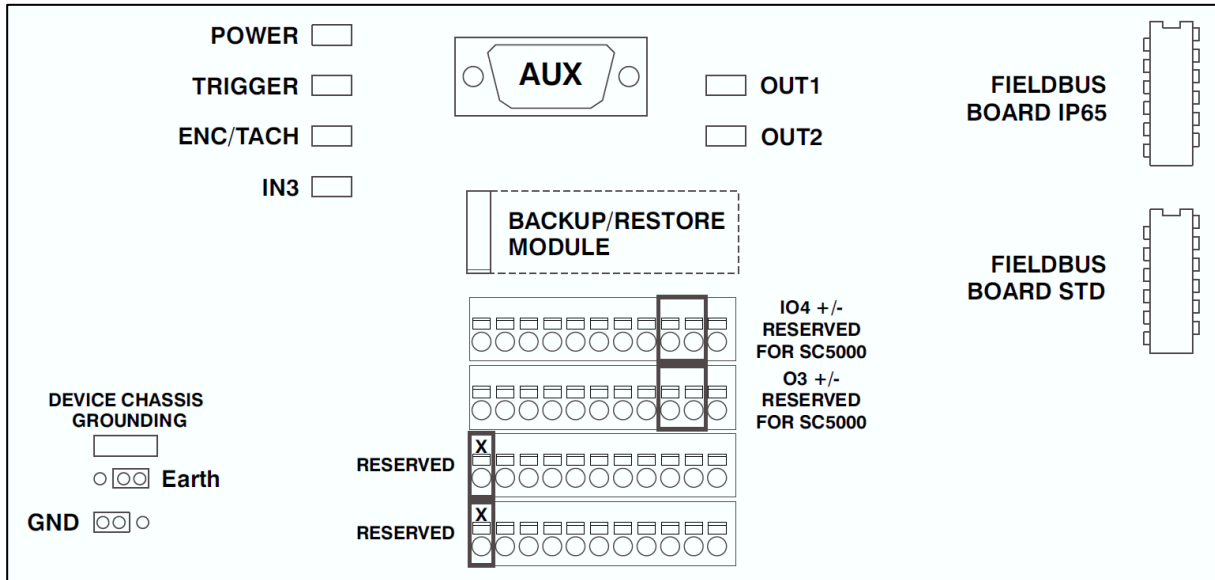


Figure 37: CBX510 Interior

3.7 CONNECTING A PC TO THE MASTER DM3610

During initial setup, a PC (laptop) may be connected to the Master DM3610 (HEAD1) with an M12 to RJ45 cable. Screw the M12 connector to the HOST port of HEAD1 and plug the RJ45 into the Ethernet port of your PC. For information on connecting to the User Interface, see *chapter 4*.

3.8 WIRING INTO THE CBX510 CONNECTION BOX



WARNING: DO NOT connect a separate power source to the CBX510 connection box. The CBX510 receives its power through its connection to the DM3610 Dimensioner (HEAD1). Connecting a separate power source will be detrimental to the system operation.

Loose-lead cables must pass through the water-tight seals in the base of the CBX510 connection box. Insert the cables allowing enough slack for the individual wires to reach the appropriate pin block connectors. Securely tighten the water-tight seals after the cables have been inserted.

Insulation on individual wires should be removed to expose 13 mm [0.5 inch] of bare metal before inserting into the pin block.

3.9 PHOTOELECTRIC SENSOR CONNECTIONS

Multi-head dimensioning applications may use a Datalogic photoelectric sensor as a trigger device. The photoelectric sensor is only required if dimension data is transmitted at a certain transmit point. The photoelectric sensor is wired directly into the CBX510.

If your application uses a trigger other than the one specified by Datalogic, follow the appropriate wiring diagram to assure proper wiring.



IMPORTANT: You must use shielded interface cables with this product. To maintain FCC compliance, the cable shield must make a 360-degree connection to the shielded mating connector.



NOTE: To confirm the photoelectric sensor is functioning properly, watch the TRIG LED while the photoelectric sensor's beam is blocked. The Datalogic photoelectric sensor also includes a status LED.

The following diagram illustrates standard/recommended wiring of the Photoelectric Sensor to the CBX510.

3.9.1 Photoelectric Sensor (NPN)

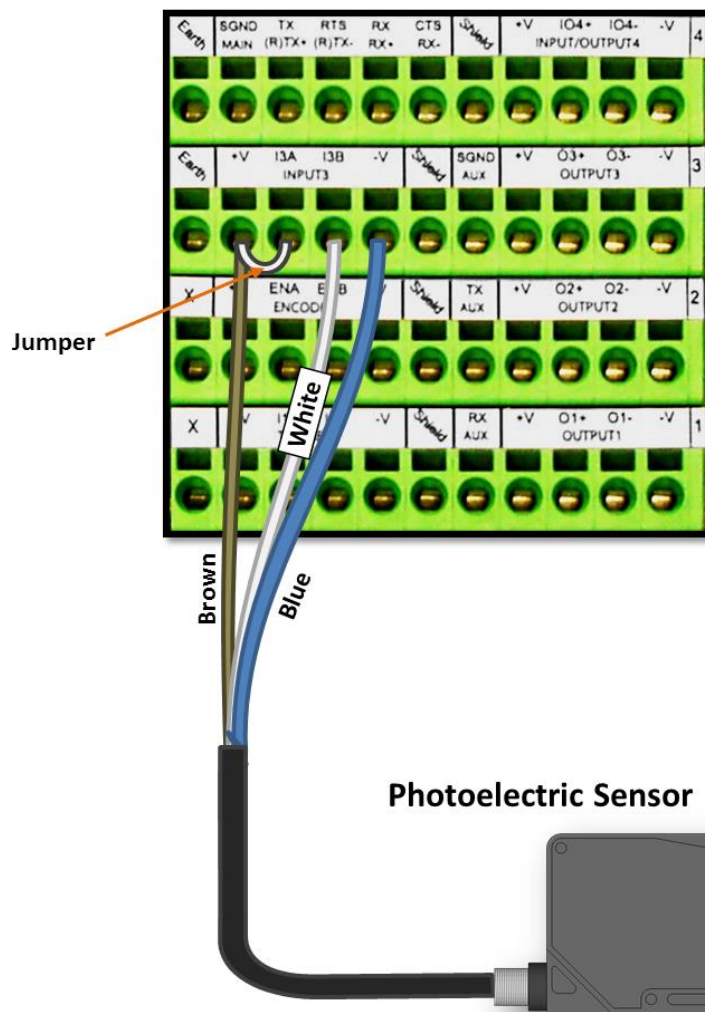


Figure 38: Photoelectric Sensor Wiring (NPN Output)

3.9.2 Photoelectric Sensor (PNP)

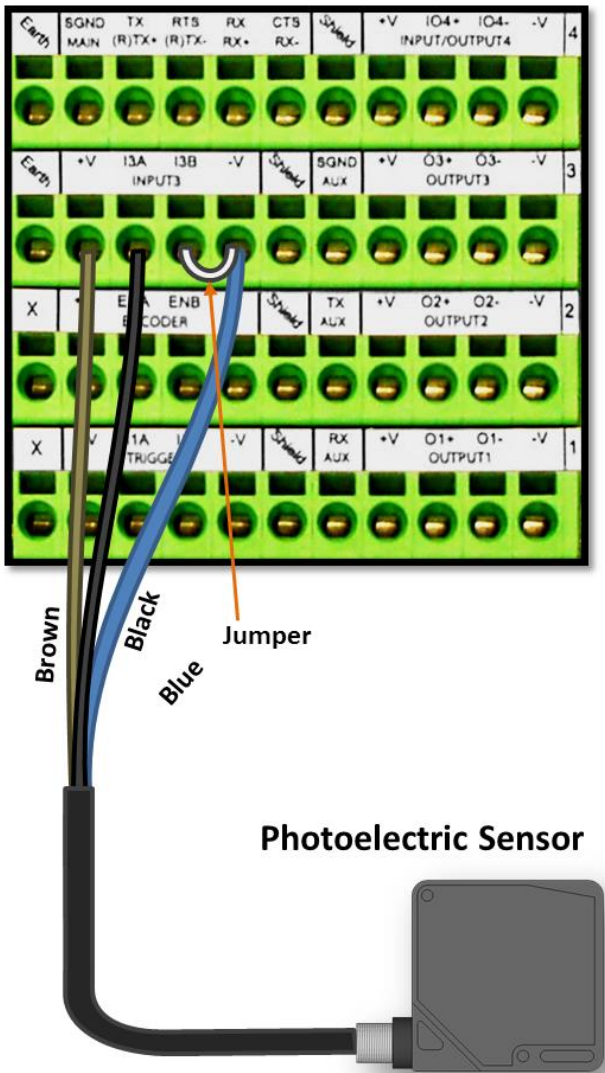


Figure 39: Photoelectric Sensor Wiring (PNP Output)

3.10 TACHOMETER WIRING

DM3610 applications over a conveyor belt use an accessory tachometer and mounting kit. Use the cable provided with the tachometer to connect to the CBX510 pin block as shown below.

3.10.1 Tachometer Wiring (NPN Output)

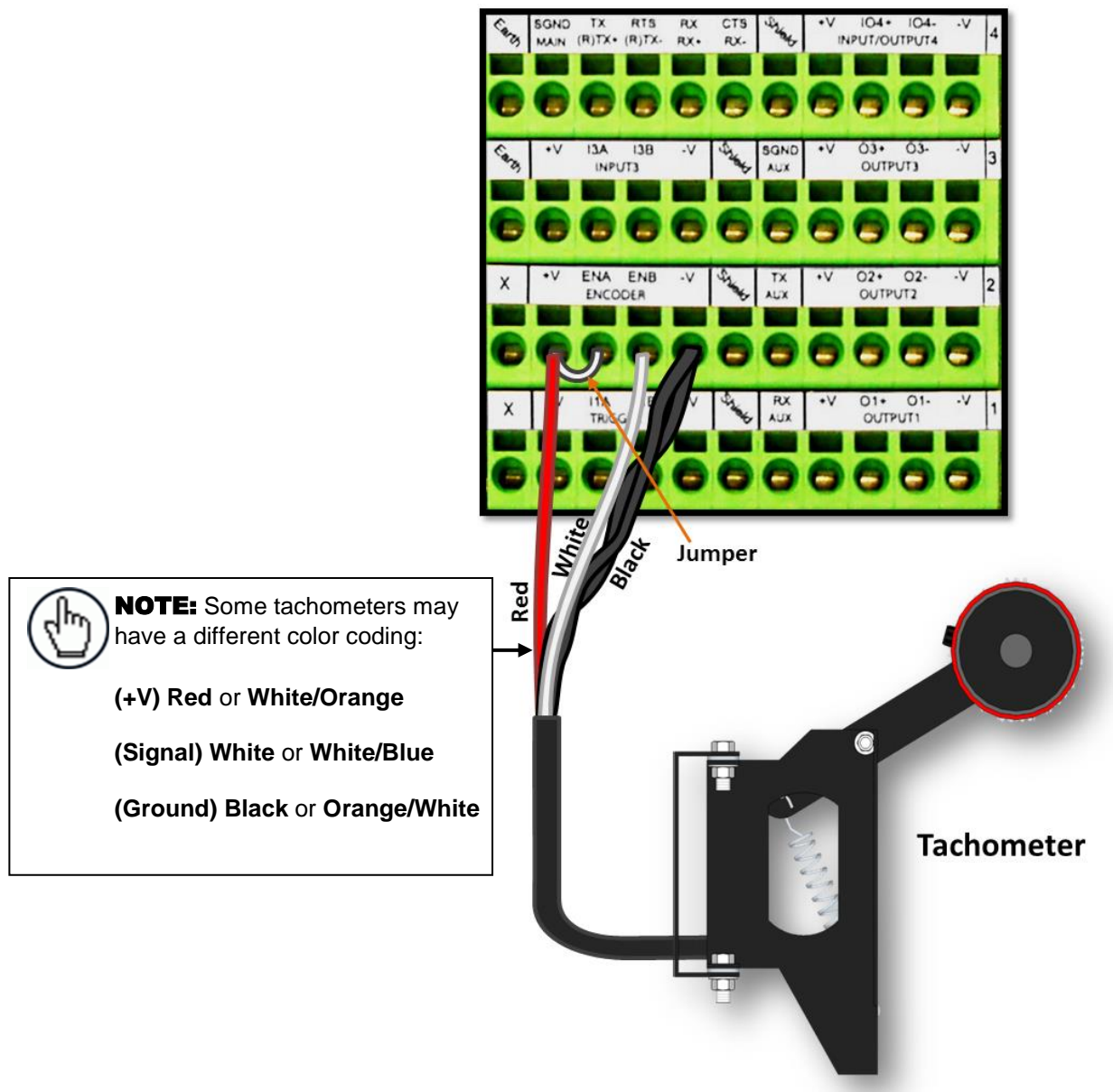


Figure 40: Tachometer Wiring (NPN Output)

3.10.2 Tachometer Wiring (PNP Output)

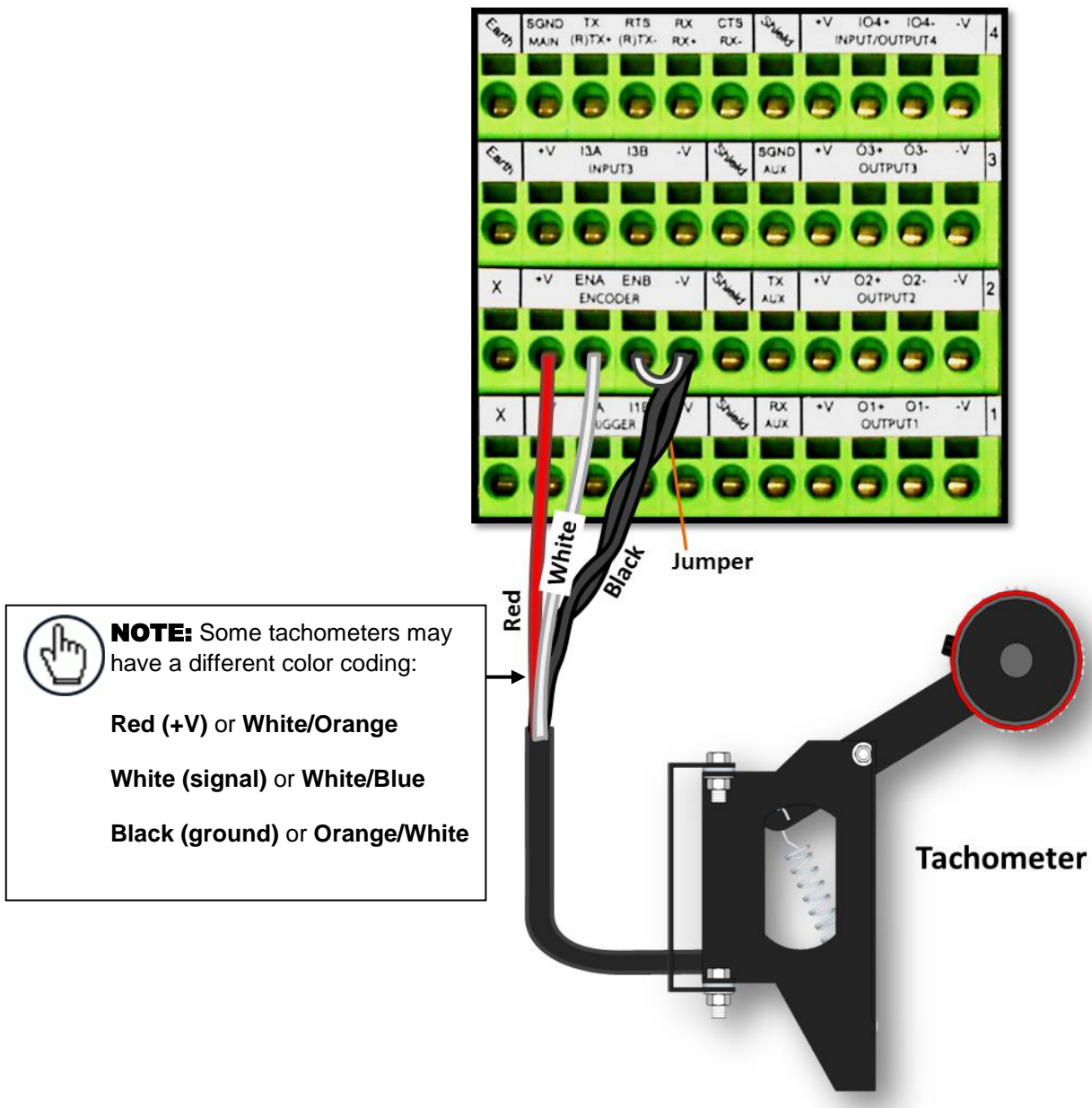


Figure 41: Tachometer Wiring (PNP Output)

3.12 REMOTE DISPLAY WIRING

In some Legal-for-Trade applications, a CD141, 40 character remote display may be required. Use the cable provided with the remote display to connect to the CBX510 pin block as shown below.

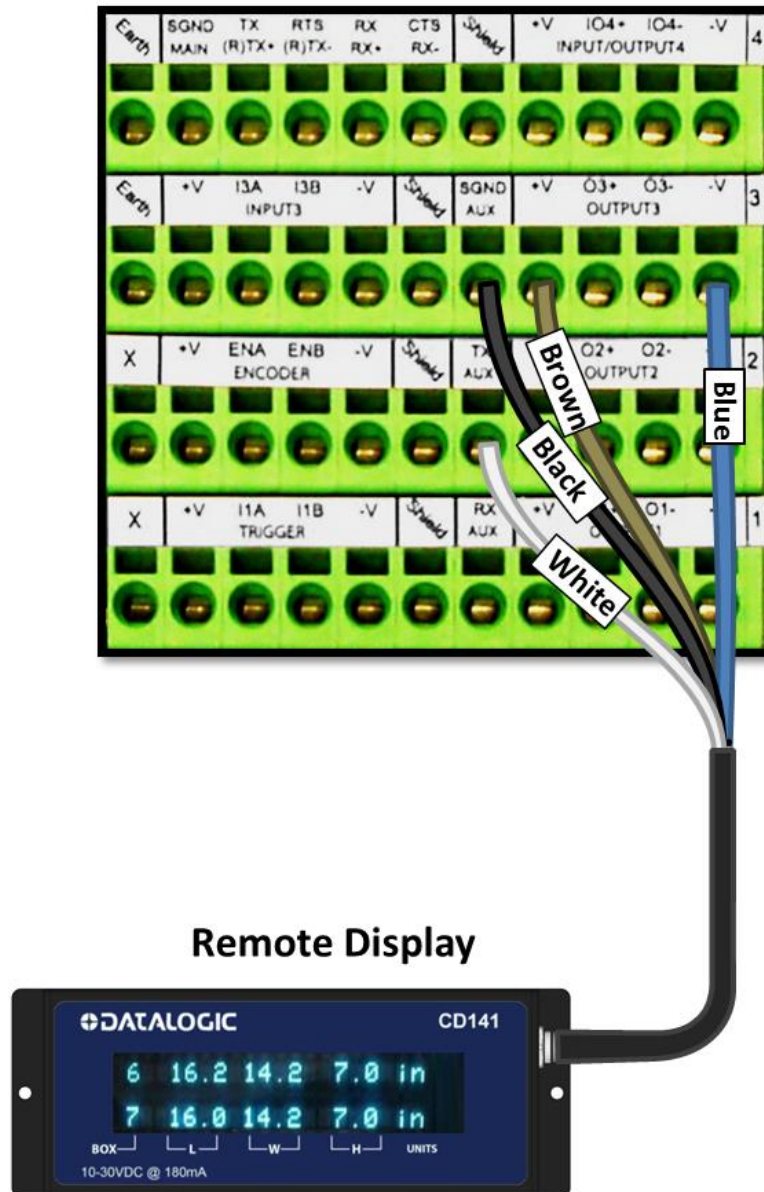


Figure 42: CD141 Remote Display Wiring

3.13 WIRING TO A SLAVE DM3610 DIMENSIONER (HEAD2) VIA THE CBX510

The Master DM3610 Dimensioner receives Tach/Trig signals through its main I/O cable connected to the CBX510. Slave DM3610 units, however, must be wired directly to the CBX510 pin-block for I/O communication.

The following diagram illustrates recommended I/O wiring from slave DM3610s to the CBX510 connection box.

3.13.1 Slave DM3610 (NPN)

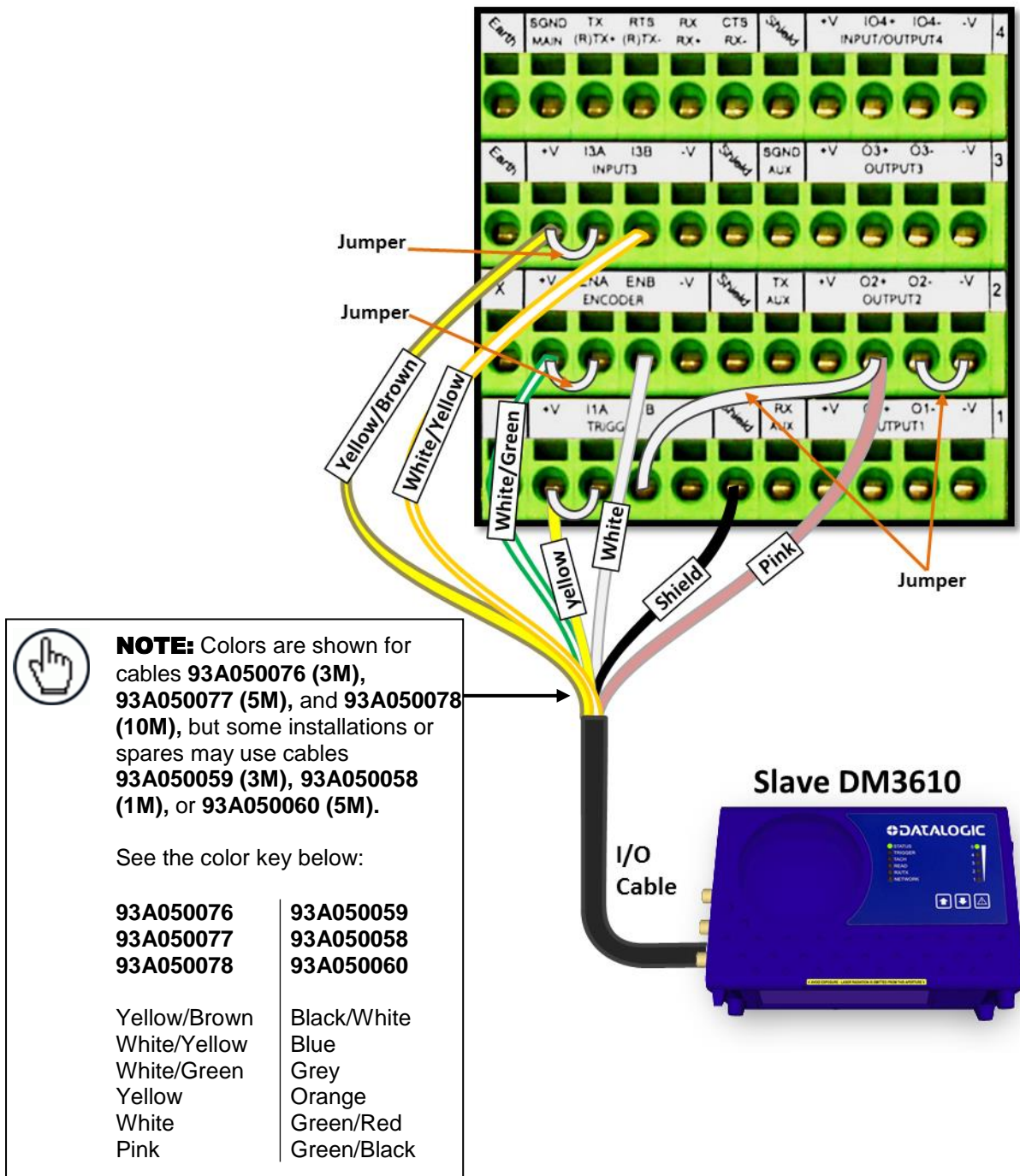


Figure 43: Slave DM3610 I/O Wiring (NPN)

3.13.2 Slave DM3610 (PNP)

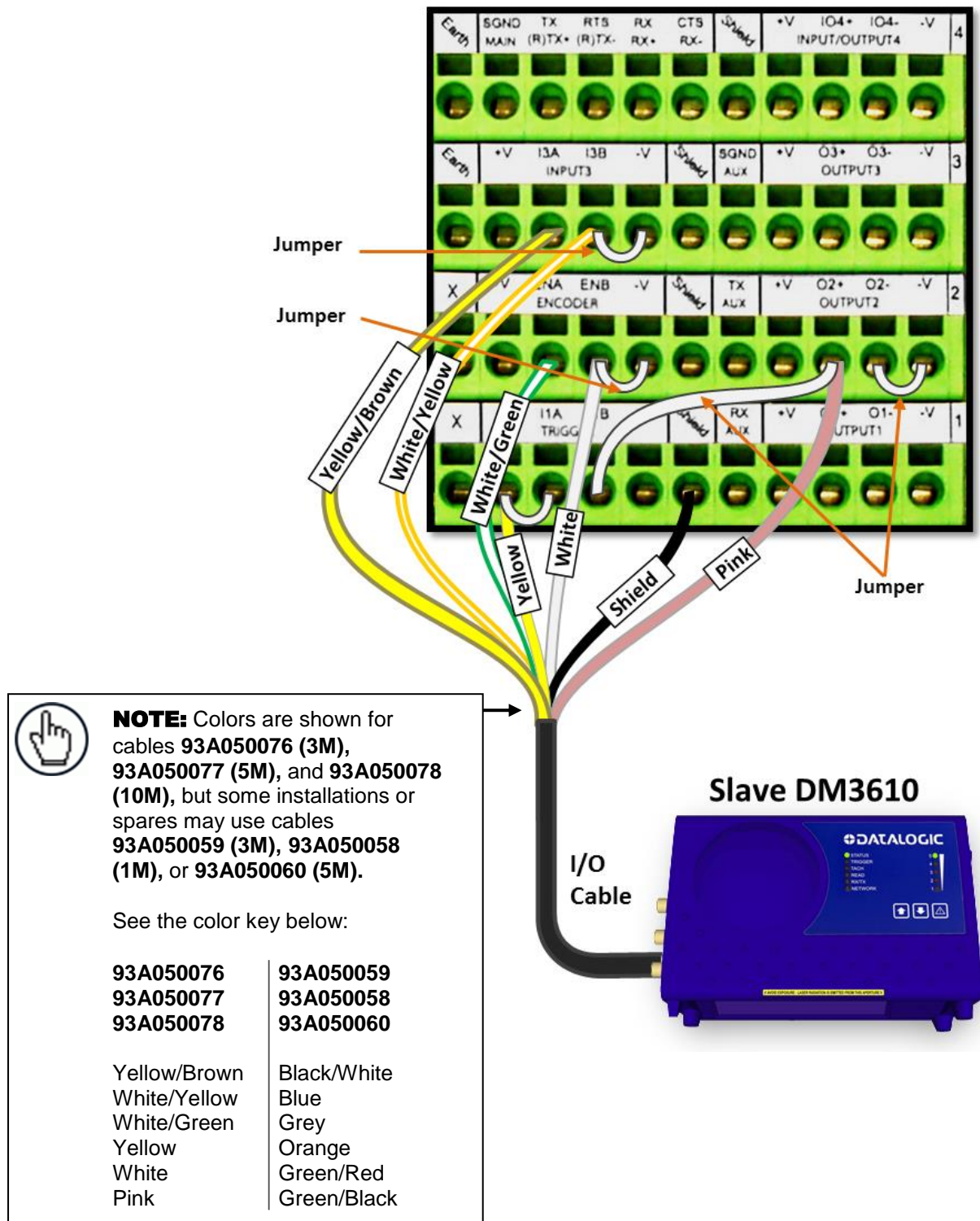


Figure 44: DM3610Slave Wiring (PNP)

3.14 SERIAL COMMUNICATION WIRING THROUGH DC3000 DIMENSIONING CONTROLLER

The dimensioning system provides serial RS-232/422 communications to other devices through the DC3000 Dimensioning Controller.

There is one D-sub 9-pin connector on the front and one on the back panel that provide serial communication.

COM1 (Serial port 1) on the rear panel supports RS-232 or RS-422 mode by BIOS selection. The COM1 default setting is RS-232; if you want to use RS-422/485, make the change in BIOS setup.

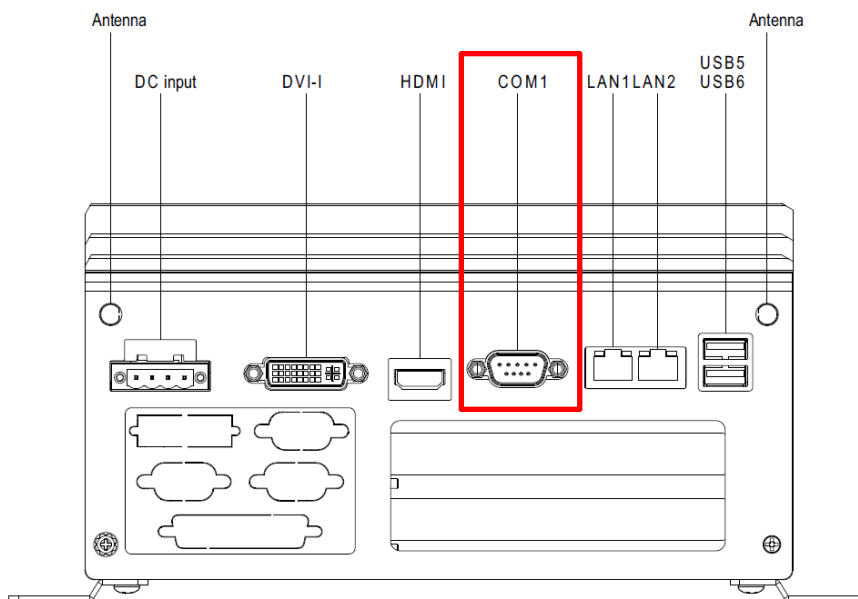


Figure 45: DC3000 Dimensioning Controller COM1 on rear panel

COM 3 (Serial Port #2) is available on the front panel and is RS-232 only.

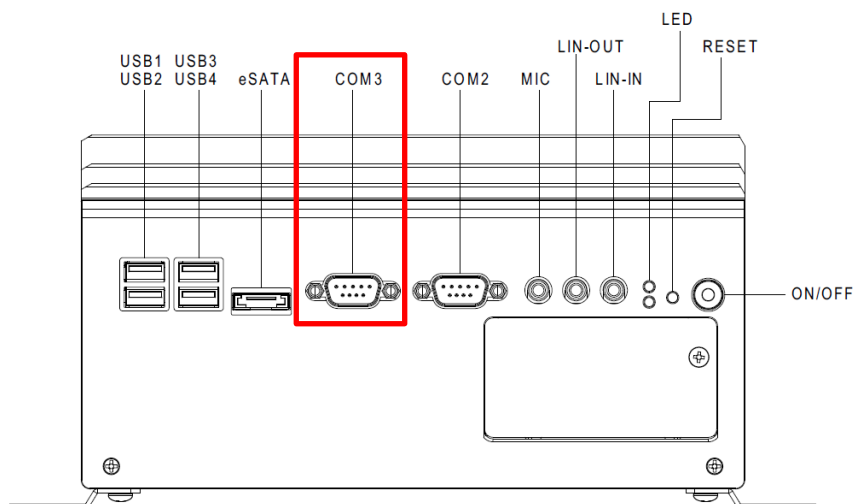
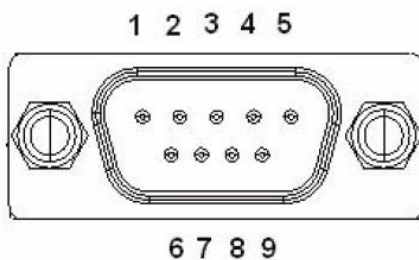


Figure 46: DC3000 Dimensioning Controller COM3 on front panel

Pin outs:

	RS-232	RS-422
Pin	Signal Name	Signal Name
1	DCD	Tx-
2	RxD	Tx+
3	TxD	Rx+
4	DTR	Rx-
5	GND	GND
6	DSR	NC*
7	RTS	NC*
8	CTS	NC*
9	RI	NC*

**NC represents "No Connection".*

- RS232 provides point-to-point communications at distances up to 15 meters [50 feet].
- RS422 provides point-to-point communications at distances up to 1200 meters [3940 feet]

3.15 CHECKING THE INSTALLATION

After completing the installation of your two-head dimensioning system:

- Confirm that the dimensioners, DC3000 Controller, and CBX510 have been properly installed mechanically and electrically. Use the Installation Sequence at the beginning of this chapter and your application specifications to check your installation.
- All interconnections should match the application drawings. (Any block diagrams or wiring diagrams provided in this manual are superseded by any customer-specific documentation provided by Datalogic.)
- The next step is to configure the parameters to meet the needs of your application. Details on using the DC3000 User Interface (Controller) are provided in *chapter 4*.

4 DC3000 USER INTERFACE

4.1 GETTING STARTED


The Two-Head Dimensioning System uses a familiar browser-based user interface, which is based on the DM3610 Dimensioner application and resides on the system's DC3000 Controller. It is the tool you will use to define operating parameters, monitor dimension quality, construct output messages, and view diagnostics for the system. The User Interface enables you to configure, fine-tune, and monitor your dimensioning system operations.



CAUTION: Because the DC3000 Controller user interface and that of the individual dimensioners look similar, make sure you are using the DC3000 Controller's user interface to configure the two-head dimensioning system.

4.1.1 Prerequisites

Before setting up your multi-head dimensioning system you will need the following:

Computer	Laptop
Browser	Internet Explorer 8 (or later)
	 NOTE: Internet Explorer 10 (or later) is required to view Diagnostics DimView and Diagnostics Monitor .
	Firefox 18.0 (or later)
	Chrome 24.0.1312 (or later)
Java	Version 7, Update 9 (or later)

4.1.2 Accessing the DC3000 User Interface

To access the DC3000 User Interface:

1. Connect your laptop computer to the master DM3610 (HEAD1) HOST port using either the CAB-ETH-M0x M12-IP67 ETHERNET CABLE or CBL-1534-0.2 ADAPT.CABLE ETH M12-TO-RJ45F.
2. Turn on your laptop computer.
3. You must configure your PC's IP Address to be in the same network as the DC3000's IP Address.



NOTE: The same changes to the laptop PC's IP address described below will be used when accessing the DM3610 User Interface.

To change your PC's IP Address:

- a. From the desktop, click the **Start** button, and then select **Control Panel**.
- b. Type **adapter** in the search box, and then from the results, under **Network and Sharing Center**, click **View network connections**.
- c. Right-click **Local Area Connection**, and then select **Properties**.
- d. Select the **Networking** tab. Under **This connection uses the following items**, click **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.
- e. Select **Use the following IP address**.
- f. In the **IP address** field, type the first 3 octets of the IP address of the DM3610 unit.
- g. For the last octet, type a number that differs from the last octet in the DM3610's IP address. The actual number used is not important as long as it does not match that of the DM3610.

Example: If the DM3610 IP Address is 192.168.3.100, set your PC's IP Address to 192.168.3.1.

- h. In the Subnet mask field, type 255.255.255.0
 - i. In the **Default gateway** field, type 0.0.0.0
 - j. Click **Okay**.
4. Open a web browser and enter the IP address for the DC3000 Controller. If the correct IP address is entered, the DC3000 Login screen will appear

The default IP address for all DC3000 units is: **192.168.3.70**

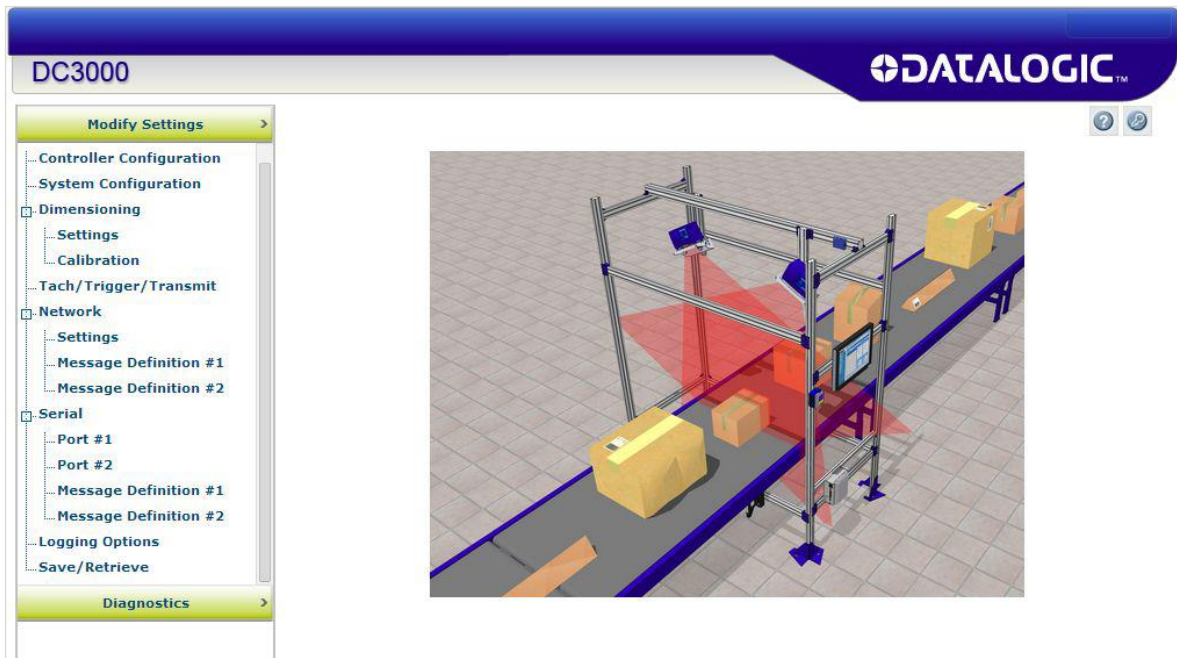
User ID

Password

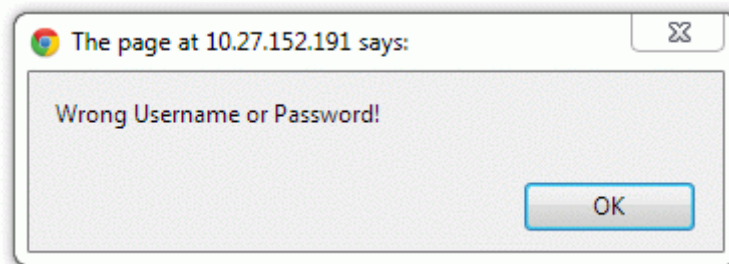
Language

5. Enter the **User ID** and **Password** for your system in the fields provided. The default User ID is "DM3610" and the default password is "DM3610." Your site administrator may have modified these defaults.
6. Select a language from the **Language** drop-down list.
7. Click **Log On**.


If the user name and password are valid, the application enables all functions available to the user and displays the main window.



If the user ID and password are *not* valid, the log on screen is presented again with the User ID and Password fields cleared.




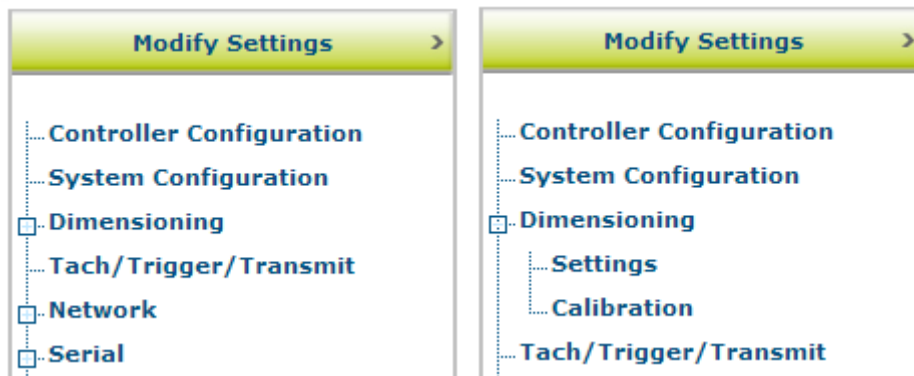
To log out of the DC3000 User Interface:

Click  at the upper right corner of the User Interface window to Log Out. When logged out, the **Log On** window will appear.

4.3 USER INTERFACE BASICS

4.3.1 DC3000 User Interface Menu Tree

The functions that you can select are displayed in a menu tree on the left-hand side of the DC3000 User Interface. The function list is organized much like the hierarchy of a file system, where you can expand items that are preceded by a box  to further sub-levels until you find a function of interest.



Sub-levels appear indented below the items from which they are expanded. Clicking the box again will collapse that branch of the menu. You can expand no further when an item is not preceded by a box.

The DC3000 User Interface menu tree appears with no items expanded. Click the folders to display the active window for the setup function and/or expand the folders to view any additional setup features.


4.3.2 Getting Help

DC3000 User Interface provides complete online help.

To access the complete help system:

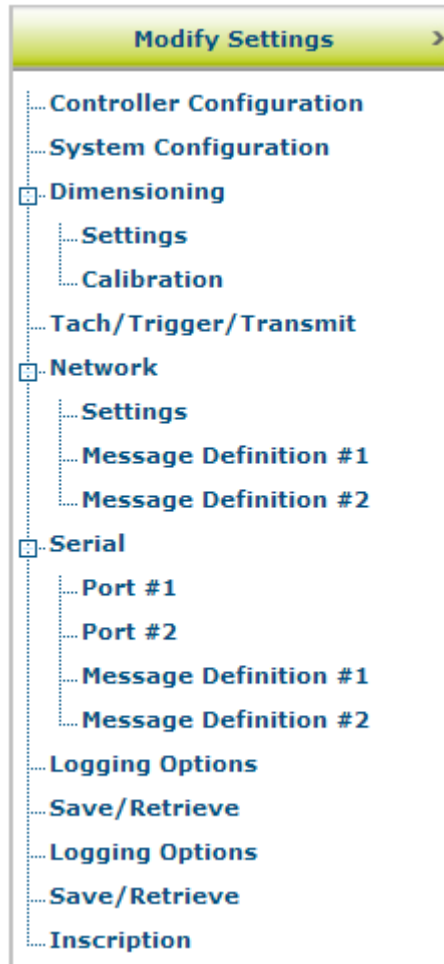
Select **Diagnostics | Help** in the DC3000 User Interface menu tree. The help **Welcome** window appears. The Welcome page provides important product information as well as three ways to find specific help information: **Contents**, **Index**, and **Search**.

To display contextual help for a current window:

1. Click the Help icon  displayed at the top right of the screen. A help window appears, providing you with information for that specific page
2. Click the **Show** link in the upper left corner of the help window to access Contents, Index, and Search options.

4.4 MODIFY SETTINGS

Use the Modify Settings menu tree selections during initial setup to configure your DM3610 Dimensioner. If necessary, you can later make modifications to the dimensioner's configuration using the same menu selections, including:



4.5 MODIFY SETTINGS | CONTROLLER CONFIGURATION

Use **Controller Configuration** to identify and configure two-head dimensioning system. This includes access to dimensioner information as well as configuration options (scan rate, control panel and network access).

To set the dimensioner Configuration:

1. In the tree menu under **Modify Settings**, click **Controller Configuration**. The **Controller Configuration** window opens.

The screenshot shows the Controller Configuration window with the following sections:

- Controller Information:**
 - Controller Name: DM3610 Controller
 - Controller Model: DC3000-1200
 - Serial Number: A14A90220
 - Software Name/Revision: DC3000 1.0(11)
- LFT Components:**

Status	App Name	Expected md5	Actual md5
	Cube3610	4e6d88b94ad9b87918dcfd7e06152499	4e6d88b94ad9b87918dcfd7e06152499
	MCM	eddfbb285f438ce31cb1554d563fe939	eddfbb285f438ce31cb1554d563fe939
	DimModule Library	de98b905fb95c7750858f39efa95169f	de98b905fb95c7750858f39efa95169f
	LftParamUtil	4bbc7c8a7ae41f20fbba5998b9f5b518	4bbc7c8a7ae41f20fbba5998b9f5b518
- Configuration Options:**
 - Units: METRIC (dropdown)
- Network Access Options:**
 - Username: DM3610
 - New Password: *****
 - Confirm Password: *****

Buttons: Update, Reset

2. Enter the appropriate information in the form as described below.

Field Name **Action/Definition**

Dimensioner Information

Controller Name	Enter a user-defined DC3000 Controller name (up to 15 characters) in the field provided. This is useful when it is necessary to identify multiple controllers within the same building or application.
-----------------	--

Controller Model	Displays the controller model (DC3000-1200, etc.)
------------------	---

Serial Number	Displays the 9 character Datalogic serial number of the DC3000 to which the user interface has established a connection.
---------------	--

Software	Displays the name and revision number of the DC3000 Controller
----------	--

Field Name	Action/Definition
Name/Revision	application software.
LFT Components	Displays the status, name, expected md5 (checksum), and actual md5 (checksum) for the included Legal For Trade components.
Configuration Options	
Units	Select Imperial or Metric from the drop-down list. This setting affects the user interface only and not the dimensioning output. To change the dimensioning output, see Modify Settings Dimensioning Settings .
Network Access Options	
Username	Use these fields to change the unit's username and password. Enter a new username.
New Password	Enter a new password.
Confirm Password	Enter the new password again.

- When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.5.1 Modify Settings | System Configuration

Use **System Configuration** displays system status and can be used to add or remove system dimensioners.

To access the **System Configuration**:

1. In the tree menu under **Modify Settings**, click **System Configuration**. The **System Configuration** window opens.

The screenshot shows the System Configuration window with the following sections:

- System LFT Status:** A green indicator light and the text "READY".
- DM3610's in this Cluster:** A table with columns: Online, Ready, MAC Address, IP Address, Port, Name, Version, and Action. Two rows are shown for HEAD 1 and HEAD 2.
- DM3610's not in this Cluster:** An empty table with the same column headers as the previous table.
- Buttons for "Update" and "Reset" are located at the bottom right.

Online	Ready	MAC Address	IP Address	Port	Name	Version	Action
		00:0E:13:05:01:3B	192.168.3.101	10001	HEAD 1	DM3610_RELEASE;1.6(19)	Blink
		00:0E:13:12:34:56	192.168.3.102	10002	HEAD 2	DM3610_RELEASE;1.6(19)	Blink



NOTE: If you access this page while the system is still in the process of starting up, the following message will be displayed.

The screenshot shows a message box with the text "WAITING FOR THE CONTROLLER TO BOOT" and "Update" and "Reset" buttons.

2. View status or enter the appropriate information in the form as described below:

Field Name	Action/Definition
------------	-------------------

System LFT Status	This display indicates the Legal For Trade status of the system. Legal For Trade indicates the system is calibrated for certified dimensioning.
--------------------------	--

DM3610's in this Cluster	This display indicates the DM3610 dimensioners that are connected to the system. Each dimensioner's Online status, Ready status, MAC Address , IP Address , Name , and software Version are displayed. <i>At least one Dimensioner is listed here all the time, even if it is just a placeholder.</i>
	To identify the dimensioners listed, click Blink. When clicked, that dimensioners LED bar graph will blink five times.

Field Name	Action/Definition
------------	-------------------

DM3610's not in this Cluster	
------------------------------	--

To Remove a Dimensioner from the System	<ol style="list-style-type: none"> 1. Disconnect a dimensioner's cables. The Action column in the disconnected dimensioner's line displays a Delete button.
--	--

t	Name	Version	Action
01	HEAD 1	DM3610_RELEASE;1.6(19)	Delete
02	HEAD 2	DM3610_RELEASE;1.6(19)	Blink

2. Click **Delete**.

To Replace a Dimensioner in the System	<ol style="list-style-type: none"> 1. Connect a dimensioner's cables to the system. The dimensioner information is displayed in DM3610's not in this Cluster. 2. Select Replace in this Cluster from the drop-down of the dimensioner you want to use to replace the placeholder shown in DM3610's in this Cluster. The new dimensioner's information replaces that of the placeholder.
---	--

To Add a Dimensioner to the System	<ol style="list-style-type: none"> 1. Connect a dimensioner's cables to the system. The dimensioner information is displayed in DM3610's not in this Cluster. 2. Under Action, select Add to Cluster as New from the drop-down list of the dimensioner you want to add. The new dimensioner's information is added in a new line under DM3610's in this Cluster.
---	---

3. When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.6 MODIFY SETTINGS | DIMENSIONING

Use the **Modify Settings | Dimensioning** menu tree selections to setup and calibrate the two-head system for certified or non-certified installations.

The menu selections include:

- Settings
- Calibration

4.6.1 Modify Settings | Dimensioning | Settings

Use **Dimensioning | Settings** to turn certification mode on or off, set dimension resolution, and define package size requirements.

To adjust the settings of the dimensioner:

1. In the tree menu under **Modify Settings**, navigate to **Dimensioning | Settings**. The **Settings** window opens.

Outputs		
Units		mm
Length Reporting		Direction of Travel
Certification Mode		Off
Length, Width Resolution (d)		5 mm
Height Resolution (d)		5 mm
Package Size Options		
Minimum Package Size	Length (mm)	50.0
	Width (mm)	50.0
	Height (mm)	50.0
Maximum Package Size	Length (mm)	2500.0
	Width (mm)	1200.0
	Height (mm)	900.0
Discard Package Size	Length/Width (mm)	12.7
	Height (mm)	12.7

2. Enter the appropriate information in the form as described below.

Field Name	Action/Definition
Outputs	
Units	Select inch or mm from the drop-down list. Once the window is updated, the dimensions displayed on this window will be displayed in the unit type selected.



NOTE: Changing the units on this window will not affect other windows in this user interface. To change the measurement units globally for the interface, see **Modify Settings | Configuration**.

Length Reporting	Select Longest Side , Direction of Travel , or Descending order from the drop-down list.
-------------------------	---

- **Longest Side:** The system assigns the length as the larger of the two parcel measurement axes that are parallel to the surface of the conveyor. The height is the measurement axis that is perpendicular to the conveyor surface.
- **Direction of Travel:** The "length" will always be defined as that parallel with the package direction of travel on the conveyor.
- **Descending Order:** The "length" is the largest value, then width, and the smallest value is height. This definition results in the same L, W, H assignment of the measurements regardless of the parcel's orientation when measured.

Field Name	Action/Definition
Certification Mode	Select On or Off from the drop-down list. Turn certification mode on for certified / Legal-for-Trade applications. Turning certification mode on causes most of the input fields in the Dimensioning Settings, Dimensioning Calibration , Configuration , and Tach/Trigger windows to be disabled (see below).

Length, Width Resolution (d)	Select the dimensioning length/width resolution from the choices provided in the drop-down list. (d) represents the smallest interval between two consecutive values used in the dimension calculations.
-------------------------------------	--

Height Resolution (d)	Select the dimensioning height resolution from the choices provided in the drop-down list.(d) represents the smallest interval between two consecutive values used in the dimension calculations.
------------------------------	---

Package Size Options

Minimum Package Size: Length (mm)/(inch) Width (mm)/(inch) Height (mm)/(inch)	Enter the minimum package size length, width, and height in inches or millimeters as indicated. Any package below these minimums will be designated as a NoDim. Minimum units must be greater than the (d) value (<i>See above</i>).
---	--

Maximum Package Size Length (mm)/(inch) Width (mm)/(inch) Height (mm)/(inch)	Enter the maximum package size length, width, and height in inches or millimeters as indicated. Any package above these maximums will be designated as a NoDim.
--	---

Discard Package Size Length/Width (mm)/(inch) Height (mm)/(inch)	Enter the minimum length/width and height below which a dimension result will be ignored. This accounts for possible anomalies on the belt surface.
---	---

- When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.6.2 Modify Settings | Dimensioning | Calibration

Use Dimensioning | Calibration to calibrate an installed DM3610 dimensioner.

To calibrate the dimensioner (See also, *Dimensioner Calibration* in chapter 5, *Dimensioning Features*):

1. In the tree menu under **Modify Settings**, navigate to **Dimensioning | Calibration**. The **Calibration** window opens.

Belt Analysis

Side Margins (in)

Head Pitch Estimate 1 (°)

Head Pitch Estimate 2 (°)

Dimensioning Area

Head Index		1		2		3	4
		Current	Find Belt	Current	Find Belt		
Scanner Height	(in)	67.806		66.742			
Left Ignore	(in)	-5.786		49.188			
Right Ignore	(in)	53.822		-0.987			
X Shift	(in)	0		2.6			
Y Shift	(in)	-29.804		25.088			
X Rotation	(°)	28.292		-31.128			

2. Enter the appropriate information in the form as described below.

Field Name	Action/Definition
Belt Analysis	
Side Margins	Side margins equal the width of spacers (the wooden blocks shown in the drawing below) that help the dimensioner find the edges of the conveyor belt. You must enter a width of the side margins used to create an edge defining transition on the outer edge of the scanning area.

If the spacers are placed inside the belt width, the spacer width must be entered into the **Side Margins** text field. *For example*, if 3-inch spacers are used, the **Side Margins** field value must be 3. The spacers must be the same width.

If the spacers can be placed outside the edge of the belt, or if side rails are present, a "0" must be entered into the **Side Margins** text field for the spacer width.

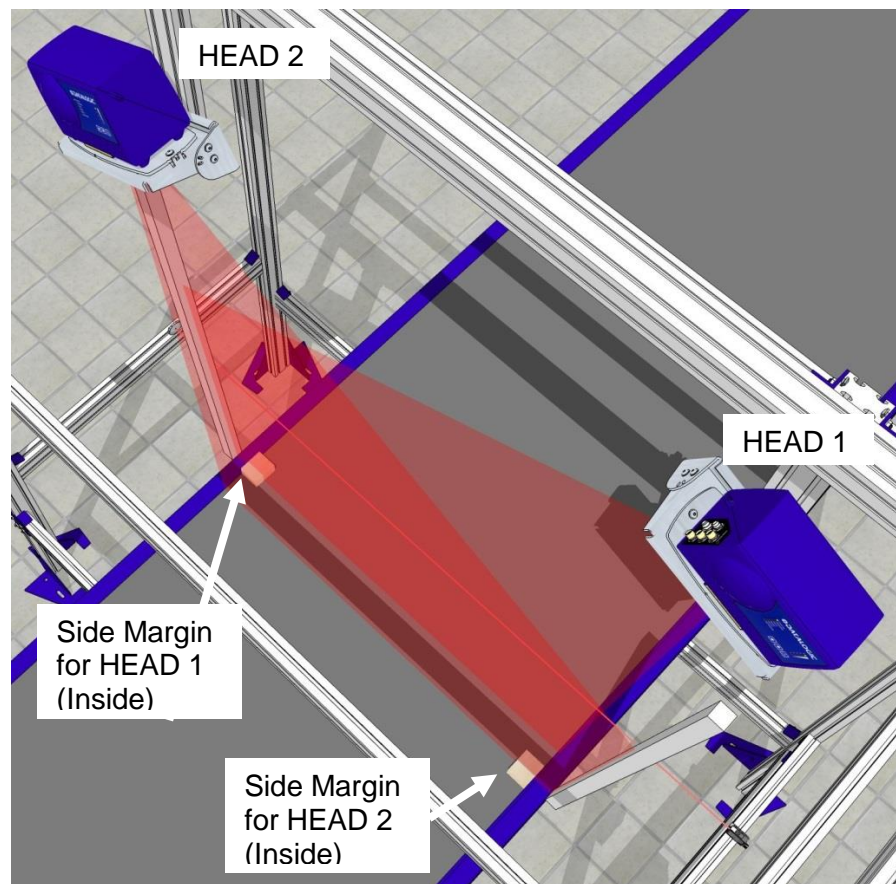


Figure 47: Side Margin Spacer Placement (Inside)

Field Name **Action/Definition**

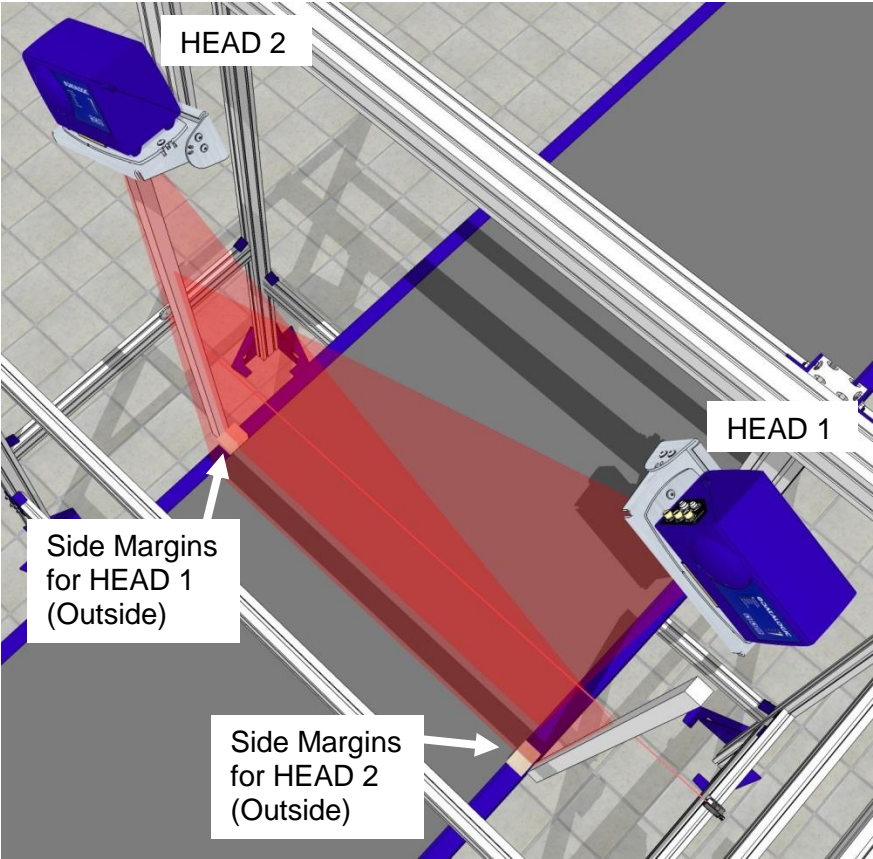


Figure 48: Side Margin Spacer Placement (Outside)

Field Name	Action/Definition
------------	-------------------

Belt Analysis	
----------------------	--

Head Pitch Estimate 1 and 2	Enter Head Pitch Estimate 1 (HEAD1) and Head Pitch Estimate 2 (HEAD2) based on the angles from the application specifications. This will be a positive degree integer for each head (no negative degree indication). The Head Pitch Estimate helps each head differentiate the conveyor bed from the beam catcher.
------------------------------------	---

Find Belt	Click Find Belt to automatically determine the Scanner Heights, Left Ignore, Right Ignore, X Shift, Y Shift, and X Rotation .
------------------	---

Head Index	1		2		3	4
	Current	Find Belt	Current	Find Belt		
Scanner Height (in)	67.806		66.742			
Left Ignore (in)	-5.786		49.188			
Right Ignore (in)	53.822		-0.987			
X Shift (in)	0		2.6			
Y Shift (in)	-29.804		25.088			
X Rotation (°)	28.292		-31.128			



NOTE: When **Find Belt** is clicked, the system calculates each dimensioner's position over the conveyor.

If the data from each dimensioning head does not agree, the following warning may appear:

WARNING: heads disagree on belt width by more than 5cm [2"]

The calculated data is automatically entered in the Find Belt fields under Dimensioning Area

Field Name **Action/Definition**

Use Belt Click **Use Belt** to transfer the "found" or calculated dimensions to the **Dimensioning Area** fields. The values are highlighted in yellow until the page has been updated.

Belt Analysis


Side Margins (in)

Head Pitch Estimate 1 (°)

Head Pitch Estimate 2 (°)

Dimensioning Area

Head Index	1		2		3	4
	Current	Find Belt	Current	Find Belt		
Scanner Height (in)	67.780	67.780	66.746	66.746		
Left Ignore (in)	-5.802	-5.802	49.228	49.228		
Right Ignore (in)	53.834	53.834	-1.001	-1.001		
X Shift (in)	0		2.6			
Y Shift (in)	-29.818	-29.818	25.115	25.115		
X Rotation (°)	28.308	28.308	-31.140	-31.140		

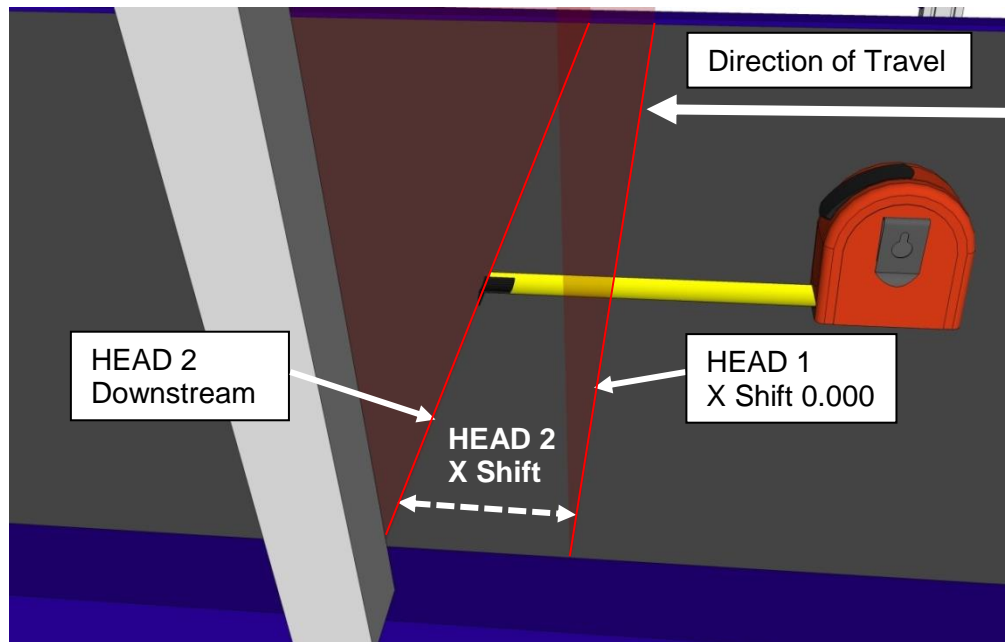
Dimensioning Area  **NOTE:** All these values, except for the **X Shift**, are automatically populated by the **Find Belt/Use Belt** commands

Scanner Height This indicates the distance from the scanner to conveyor belt surface.

Left Ignore This indicates the distance from the center of the scan line to the left edge of the belt. Scan points beyond this distance will be ignored.

Right Ignore This indicates the distance from the center of the scan line to the right edge of the belt. Scan points beyond this distance will be ignored.

X Shift Enter the measured distance on the belt from DM3610 HEAD1 scan line to HEAD2 scan line.



1. Enter 0.000 for the **X Shift** of HEAD1.
2. Measure the **X Shift** distance between the scan lines from HEAD1 to HEAD2. This number will be positive.
3. Enter the measured distance between the laser lines in the **X Shift** for HEAD2. This number will be positive.

Y Shift This indicates the DM3610 dimensioner's position shift from center along the Y-axis.

X Rotation This indicates the DM3610 dimensioner's degrees of rotation on the X-axis.

3. When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.7 MODIFY SETTINGS | TACH/TRIGGER/TRANSMIT

Use Tach/Trigger/Transmit to set up the tachometer source and trigger source. A range of settings are definable based on use of hardware or software sources.

To set up tachometer and trigger sources:

1. In the tree menu under **Modify Settings**, navigate to **Tach/Trigger/Transmit**. The **Tach/Trigger/Transmit** window opens.

Section	Parameter	Value	Unit
Tachometer	Pulse per in	16.00	
	Tach Scale Factor	1	
Trigger	Trigger Source	Hardware Trigger	
	Debounce Duration (ms)	5	
	Trigger Reference Point	6.0	in
Transmit	Transmit Edge	Trailing Edge	
	Transmit Point	60.0	in

Update Reset



NOTE: The information entered here supersedes the data entered in the **Tach/Trigger/Transmit** page of the DM3610 User Interface for each individual dimensioner.



WARNING: Individual DM3610 dimensioners must be set to **Continuous Trigger** in the DM3610 User Interface (**Modify Settings | Tach/Trigger/Transmit**)

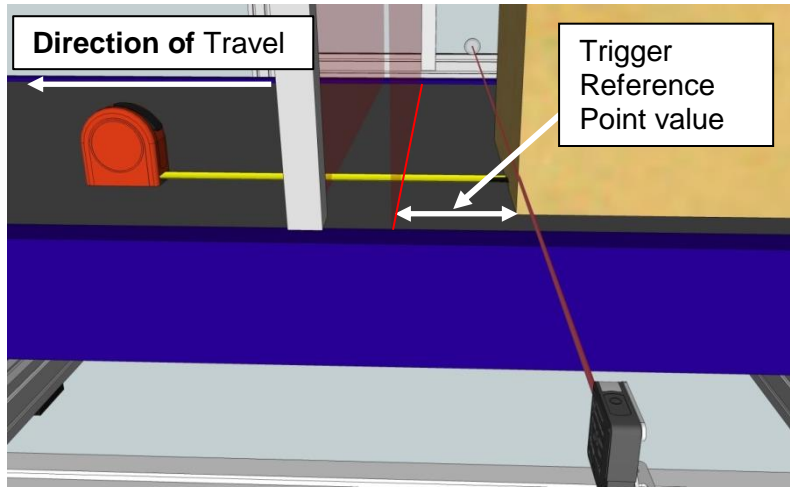
2. Enter the appropriate information in the form as described below.

Field Name	Action/Definition
------------	-------------------

Tachometer	
Pulse per cm [in]	Enter the number of tachometer pulses used per cm [in] traveled.
Tach Scale Factor	Enter a factor to eliminate deviations in the expected versus actual tachometer pulses/inch or cm.
<p>For example: If you notice that the length (in the direction of travel) of your package is too short and you have a tachometer pulse of 16 pulses per inch, enter a Tach Scale Factor of less than 1.0. If you enter 0.97 your effective pulses per inch become 15.52 pulses per inch. If, however, your package is too long, enter Tach Scale Factor greater than 1.0. Adjust by small increments.</p>	
Trigger	
Trigger Source	Select Hardware Trigger , Software Trigger , or Continuous Trigger from the drop-down list.
Hardware Trigger	This refers to an actual photoelectric sensor used as the trigger.
	
Debounce Duration (ms)	Enter the minimum number of milliseconds required for detection of a change in the hardware trigger status.

Field Name Action/Definition

Trigger Reference Point Enter the distance from your trigger source to the DM3610 HEAD1 laser scan line.



Software Trigger

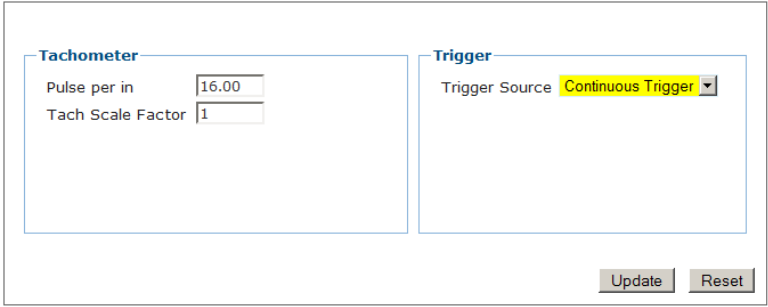
<p>Tachometer</p> <p>Pulse per in <input type="text" value="16.00"/></p> <p>Tach Scale Factor <input type="text" value="1"/></p>	<p>Trigger</p> <p>Trigger Source <input type="text" value="Software Trigger"/></p> <p>Software Trigger <input type="text" value="Host - 1"/></p> <p>Start Char <input type="text" value="S"/></p> <p>End Char <input type="text" value="E"/></p> <p>Trigger Reference Point <input type="text" value="6.0"/> in</p>
<p>Transmit</p> <p>Transmit Edge <input type="text" value="Trailing Edge"/></p> <p>Transmit Point <input type="text" value="60.0"/> in</p>	<p><input type="button" value="Update"/> <input type="button" value="Reset"/></p>

Software Trigger Select Host - 1, Host - 2, Net - 1, or Net - 2 from the drop-down list.
The software trigger can be any "host port" either serial or network based.

Start Char Define the ASCII characters that, when received, will start trigger for the reader.

End Char Define the ASCII characters that, when received, will end trigger for the reader.

Trigger Reference Point Enter the distance from your trigger source to the DM3610 laser scan line.

Field Name	Action/Definition
Continuous Trigger	<p>When selected, the dimensioner is always in trigger mode and immediately transmits the dimensions of any package seen.</p> 
Transmit	Transmit is hidden if Continuous Trigger is selected as the trigger source.
Transmit Edge	Specifies which edge of the package (leading or trailing) is used to reference the transmit point.
Transmit Point	This input is only visible when DIM-in-Head Enabled is set to On in Modify Settings Dimensioning Settings . The point at which dimension data is transmitted. Defines the number of inches or centimeters after the specified edge of the package passes the trigger before data transmission occurs.

- When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.8 MODIFY SETTINGS | NETWORK

Use **Modify Settings | Network** to specify network settings (including the IP address) for the dimensioner. Net Host Connection 1 and Net Host Connection 2 define two network connections for sending messages. The Connection Type and Message Format for each port can be set independently. Message formatting is the same as for the serial port. The menu selections include:

- Network Settings
- Message Definition #1
- Message Definition #2

Definitions:

IP Address - An IP address specifies a unique host ID for the reader on a particular TCP/IP network. Consult your network administrator for a valid IP address for the reader.

Net Mask - A netmask modifies a standard IP address into subnets. A default class C net mask should be valid in most cases (either 255.255.255.0 or 255.255.240.0). Consult your network administrator for the net mask value.

Gateway IP Address - A gateway allows the reader to reach other systems not on the local network and remote systems to reach the reader. If the reader requires external connectivity, consult your network administrator for a valid gateway address.

4.8.1 Modify Settings | Network | Network Settings

Use **Modify Settings | Network | Network Settings** to specify network settings (including the IP address) for the dimensioner.

Net Host Connection 1 and **Net Host Connection 2** define two network connections for sending messages. The **Connection Type** and **Message Format** for each port can be set independently. Message formatting is the same as for the serial port.

To adjust the network settings of the dimensioner:



1. In the tree menu under **Modify Settings**, navigate to **Network | Network Settings**. The **Network Settings** window opens.

The screenshot displays the 'Network Settings' window with the following configuration:

- Network Port #1**
 - Enable DHCP
 - IP Address**: 192 | 168 | 3 | 70
 - Net Mask**: 255 | 255 | 255 | 0
 - Gateway IP Address**: 0 | 0 | 0 | 0
- Network Port #2**
 - Enable DHCP
- Net Host Connection 1**
 - Connection Type: TCP/IP Server
 - Message Format: Custom Message
 - Port: 3001
- Net Host Connection 2**
 - Connection Type: TCP/IP Server
 - Message Format: Custom Message
 - Port: 3002

Buttons: Update, Reset

2. Enter the appropriate information in the form as described below.

Field Name	Action/Definition
Enable DHCP	Select this box to enable DHCP (Dynamic Host Configuration Protocol.) If selected, the system gets the IP Address, Net Mask, and Gateway IP Address from a DHCP server. When selected, the manual entry fields for these protocols will not be available.
Static Host	When Enable DHCP is not selected , you must specify unique IP Address information. <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> IP Address <input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="3"/> <input type="text" value="70"/> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> Net Mask <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/> </div> <div style="border: 1px solid #ccc; padding: 5px;"> Gateway IP Address <input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="3"/> <input type="text" value="1"/> </div> </div>
IP Address (1)	An IP address specifies a unique host ID for the controller on a particular TCP/IP network. Consult your network administrator for a valid IP address for the reader. <div style="margin-top: 10px;">  <p>NOTE: If you choose to enable a second IP address, the local IP address must be entered in the IP Address 1 text fields. The Host IP address must then be entered in the IP Address 2 text fields. This is because the Gateway Address is associated with IP address 2.</p> </div>
Net Mask	A net mask modifies a standard IP address into subnets. A default net mask should be valid in most cases (255.255.255.0). Consult your network administrator for the net mask value.
Gateway IP Address	A gateway allows the reader to reach other systems not on the local network and remote systems to reach the reader. If the reader requires external connectivity, consult your network administrator for a valid gateway address.
IP Address (2)	Enter a secondary IP address for the unit. <div style="margin-top: 10px;">  <p>NOTE: If you choose to enable a second IP address, the local IP address must be entered in the IP Address 1 text fields. The Host IP address must then be entered in the IP Address 2 text fields. This is because the Gateway Address is associated with IP address 2.</p> </div>
Net Mask (2)	Enter a secondary Net Mask for the unit.

Field Name	Action/Definition
Gateway IP Address (2)	A gateway allows the reader to reach other systems not on the local network and remote systems to reach the reader. If the reader requires external connectivity, consult your network administrator for a valid gateway address.

Net Host Connection *n*

Select a connection types from the drop-down list:

TCP/IP Server: As a TCP/IP server, a Port # must be specified. In this case it is the TCP/IP client's responsibility to initiate a connection.

TCP/IP Client: As a TCP/IP client, aside from the Port #, the Remote IP Address of the TCP/IP server which is to receive messages must be specified.

When used, a **Reconnect Time** must be entered in the field provided. The **Reconnect Time** specifies the interval (in seconds) at which the reader attempts to establish a connection.

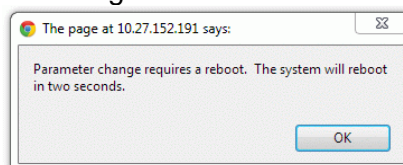
A remote IP address must also be entered in the fields provided.

UDP Messaging (User Datagram Protocol): In some instances, it may be desirable to use a connection-less UDP message to send data. In this case, only the Port # and Remote IP Address of the receiver need to be specified.

When used, a remote IP address must also be entered in the fields provided.



NOTE: Selecting a new Net Host **Connection Type** and clicking **Update** will cause the DM3610 to reboot. A reboot message is displayed. Click **OK** to return to the Log On window.




Select a Message Format from the drop-down list:

Custom Message: This selection may only be available when custom dimensioner software has been developed and installed for your system by Datalogic.



NOTE: When **Custom Message** is selected, editable fields in the **Message Definition #n** window may be defined by the custom software installed.

Standard Message: When Standard Message is selected, the system uses a message format as defined by the standard DM3610 software.

Field Name	Action/Definition
	 NOTE: When Standard Message is selected, no user input is permitted in the Message Definition #<i>n</i> window. User Defined Message: This selection allows the user to define messages used. Messages can be defined in the Message Definition # <i>n</i> window.

3. When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.8.2 Modify Settings | Network | Message Definition #N

Use **Modify Settings | Network | Message Definition #n** to define messages when User Defined Messages has been selected in the **Network Settings** window.

To define the appearance of dimensioner messages:

1. In the tree menu under Modify Settings, navigate to Network | Message Definition #n. The Message Definition #n window opens.

The screenshot shows the 'Message Definition #n' window with two main sections: 'Framing' and 'Messages'.

Framing Section:

- Header: \02
- Trailer: \0d\0a
- Sequence: No Sequence No. (dropdown)
- Check Digits: CRC (dropdown)

Messages Section:

- Dim: Send Dimensions (dropdown)
- NoDim: Send Dimensions (dropdown)
- Dimensions Format: LWH (dropdown)
- Field Width: 4 (dropdown)
- Dimension Units: mm (dropdown)
- Precision: 0 (dropdown)
- Field Delimiter: ; (text input)
- Omit Decimal:
- Lead Padding: (text input)
- Trail Padding: (text input)
- Append Units: Separator: ; (text input)
- Append Ready Status: Separator: ; (text input)
- Append NoDim Status: Separator: ; (text input)
- Append Alibi Info: Separator: ; (text input)
- Append Volume:
- Heart Beat Message: (text input)
- Heart Beat Time Out (0-30,000 ms): 0 (text input)

Buttons: Update, Reset



NOTE: When **Standard Message** is selected in **Modify Settings | Network | Network Settings**, the system uses a message format as defined by the standard software. When selected, the input fields are not available.

This screenshot shows the same 'Message Definition #n' window as above, but with a greyed-out appearance. The input fields for 'Field Delimiter', 'Lead Padding', 'Trail Padding', 'Separator' fields, 'Heart Beat Message', and 'Heart Beat Time Out' are disabled, indicating that the 'Standard Message' option is selected.

2. Enter the appropriate information in the form as described below.

Field Name	Action/Definition
Framing	Define the message framing
Header	Enter a character string for the header (ASCII or Hex). These characters will be sent at beginning of every message. Up to 25 characters are allowed.
Trailer	Enter a character string for the trailer. These characters will be sent to terminate every message.
Sequence	Select No Sequence No. , 1 Digit Sequence No. , 2 Digit Sequence No. , or 3 Digit Sequence No. from the drop down list. When a digit sequence is selected, a sequence number consisting of the specified number of digits is inserted just after the header.
Check Digits	Select BCC or CRC from the drop-down list. When enabled, a two-character hexadecimal check character is inserted just prior to the trailer.
Messages	
Dim	Select None , Send Dimensions , or User Defined from the drop-down list. <p>None: No dimension data is sent in the message.</p> <p>Send Dimensions: This selection sends the package dimensions in the message.</p> <p>User Defined: When selected, a text field is provided for entry of a user defined message.</p> <p>Dim <input type="text" value="User Defined"/></p>
No Dim	Select None , Send Dimensions , or User Defined from the drop-down list. <p>None: No dimension data is sent in the message.</p> <p>Send Dimensions: This selection sends the package dimensions in the message.</p> <p>User Defined: When selected, a text field is provided for entry of a user defined message.</p> <p>NoDim <input style="background-color: yellow;" type="text" value="User Defined"/> <input type="text" value="????,???,????"/></p>
Dimensions Format	Select in what order you would like the Length, Width, and Height measurements to appear in the message. L =Length / W =Width / H =Height

Field Name	Action/Definition
Field Width	Select the field width of the minimal number of characters for length, width, and height from the drop-down list. 2 to 7 characters are available. If the value has fewer characters than the field width, it will be padded with zeros on the left. For example: If Precision is set at 1 (1 decimal place), field width is set at 5, and the dimension is 12.3, then the returned value in the host message will be 012.3 If Precision is set at 2 (2 decimal place), field width is set at 7, and the dimension is 12.3, then the returned value in the host message will be 0012.30
Dimension Units	Select in (inches), mm (millimeters), or cm (centimeters) from the drop down list.
Precision	Select 0, 1, or 2 from the drop-down list. This is the number of digits appearing after the decimal point.
Field Delimiter	Enter a character to be used as a delimiter between length, width, and height fields. A semicolon is often used to separate data.
Omit Decimal	Select this check box to remove the decimal point character from the message. Only the decimal point character is removed, and digits before and after the decimal point remain.
Lead Padding	Enter characters to proceed the length, width, and height field.
Trail Padding	Enter characters to follow the length, width, and height field.
Append Units	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. A unit abbreviation (mm, cm, or in) will be appended after the separator.
Append Ready Status	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. NOTREADY or READY will be appended after the separator. NOTREADY indicates that this package result is not legal-for-trade.
Append NoDim Status	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. If the package is a NoDim, a reason code is appended after the separator. For example: NODIM_BOX_STACKED, NODIM_BOX_SIDES_TO_NOISY A NoDim reason indicates that this package result is not legal-for-trade.

Field Name	Action/Definition
Append Alibi Info	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. Alibi storage information is appended after the separator. This is a MAC address, followed by a 10 digit sequence number, dash, then 14 char date/time.

Format: 00:0e:13:05:00:01nnnnnnnnnn-YYYYMMDDhhmmss



NOTE: Alibi is only available for controller model DC3000-1200 (OIML) and dimensioner model DM3610-3200 (OIML).

Append Volume	Select the check box to enable. When checked, Volume Units , Volume Field Width , and Volume Precision drop-down boxes are revealed.
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Volume Units Volume Field Width
 Volume Precision

Select cubic Volume Units from the drop-down list. Selections include in³ (inches cubed), ft³ (feet cubed), cm³ (centimeters cubed), and dm³ (decimeters cubed).

Select a Volume Field Width of 2 to 8 from the drop-down list. This represents the number of characters available for the field width. If the value has fewer characters than the field width, it will be padded with zeros on the left.

Select a Volume Precision of 0 to 3 from the drop-down list. This is the number of digits appearing after the decimal point.

For example:

If **Volume Precision** is set at 1 (1 decimal place), **Volume Field Width** is set at 5, and the volume is 25.8 cm³, then the returned value in the host message will be **025.8**

If **Volume Precision** is set at 2 (2 decimal place), **Volume Field Width** is set at 8, and the volume is 25.8 cm³, then the returned value in the host message will be **00025.80**

Heart Beat Message	Enter a heart beat message in milliseconds if desired. If no other message is sent for the time period specified in Heart Beat Time Out , the specified heart beat message string is sent.
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NOTE: A time-out of zero disables the heart beat message.

Field Name	Action/Definition
Heart Beat Time Out (0-30,000 ms)	Enter an interval for heart beat time out in milliseconds. 0 = Disable Heart Beat Message, 1-30,000 = Delay before sending Heart Beat Message

3. When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.9 MODIFY SETTINGS | SERIAL

Use Modify Settings | Serial to specify serial settings for the dimensioner. Port #1 and Port #2 define two serial connections for sending messages. The Connection Type and Message Format for each port can be set independently. The menu selections include:

- Port #1
- Port #2
- Message Definition #1
- Message Definition #2

4.9.1 Modify Settings | Serial | Port #N

Use Modify Settings | Serial | Port #1 (or #2) to define the format of message the dimensioner sends to your host computer (or other device) connected to Serial Port n.

To adjust the serial port settings for the dimensioner:


1. In the tree menu under **Modify Settings**, navigate to **Serial | Port #n**. The **Port #n** window opens.

The screenshot displays a configuration window for serial port settings. It is organized into several sections:

- Baud Rate:** A list of radio buttons for 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200. The 9600 option is selected.
- Data Bits:** Radio buttons for 7 Bits and 8 Bits. The 8 Bits option is selected.
- Stop Bits:** Radio buttons for 1 Bits and 2 Bits. The 1 Bits option is selected.
- Parity:** Radio buttons for None, Even, and Odd. The None option is selected.
- Message Format:** A dropdown menu currently set to 'Custom Message'. To the right of the dropdown, text reads: 'Custom messaging is enabled here if your application uses custom software.'

At the bottom right of the window, there are two buttons: 'Update' and 'Reset'.

2. Select the appropriate information in the form as described below.

Field Name	Action/Definition
Baud Rate	Select a baud rate from the options provided (signal events per second).
Data Bits	Select the number of data bits from the options provided (bits per second).
Stop Bits	Select the number of stop bits from the options provided.
Parity	Select a parity option of None , Even , or Odd .
Message Format	<p>Select a message format from the drop-down list:</p> <p>Custom Message: Custom messaging is enabled here if your application uses custom software.</p> <p>Standard Message: The standard message format begins with a (STX) character and ends with a (CR)(LF).</p> <p> NOTE: When Standard Message is selected, no user input is permitted in the Message Definition #n window.</p> <p>User-Defined Message: Use the Message Definition form to specify your message format.</p> <p>Legal for Trade: Select this option to use an external display device for certified dimensioning.</p>

3. When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.9.2 Modify Settings | Serial | Message Definition #N

Use Modify Settings | Serial | Message Definition #n to define messages when User Defined Messages has been selected in the Serial Port #n window.

To define the appearance of dimensioner messages:

1. In the tree menu under **Modify Settings**, navigate to **Serial | Message Definition #n**. The Message Definition #n window opens.



NOTE: When **Standard Message** is selected in **Modify Settings | Serial | Port #n**, the system uses a message format as defined by the standard software. When selected, the input fields are not available.

2. Enter the appropriate information in the form as described below.



NOTE: Available user interaction with this form will vary depending on the Message Format selected in **Modify Settings | Serial | Port #n**.

Field Name	Action/Definition
Framing	Define the message framing
Header	Enter a character string for the header (ASCII or Hex). These characters will be sent at beginning of every message. Up to 25 characters are allowed.
Trailer	Enter a character string for the trailer. These characters will be sent to terminate every message.
Sequence	Select No Sequence No. , 1 Digit Sequence No. , 2 Digit Sequence No. , or 3 Digit Sequence No. from the drop down list. When a digit sequence is selected, a sequence number consisting of the specified number of digits is inserted just after the header.
Check Digits	Select BCC or CRC from the drop-down list. When enabled, a two-character hexadecimal check character is inserted just prior to the trailer.

Messages

Dim	Select None , Send Dimensions , or User Defined from the drop-down list. None: No dimension data is sent in the message. Send Dimensions: This selection sends the package dimensions in the message. User Defined: When selected, a text field is provided for entry of a user defined message.
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Dim User Defined

No Dim	Select None , Send Dimensions , or User Defined from the drop-down list. None: No dimension data is sent in the message. Send Dimensions: This selection sends the package dimensions in the message. User Defined: When selected, a text field is provided for entry of a user defined message.
---------------	--

NoDim User Defined

Field Name	Action/Definition
Dimensions Format	Select in what order you would like the Length, Width, and Height measurements to appear in the message. L =Length / W =Width / H =Height
Field Width	Select the field width of the minimal number of characters for length, width, and height from the drop-down list. 2 to 7 characters are available. If the value has fewer characters than the field width, it will be padded with zeros on the left. For example: If Precision is set at 1 (1 decimal place), field width is set at 5, and the dimension is 12.3, then the returned value in the host message will be 012.3 If Precision is set at 2 (2 decimal place), field width is set at 7, and the dimension is 12.3, then the returned value in the host message will be 0012.30
Dimension Units	Select in (inches), mm (millimeters), or cm (centimeters) from the drop down list.
Precision	Select 0, 1, or 2 from the drop-down list. This is the number of digits appearing after the decimal point.
Field Delimiter	Enter a character to be used as a delimiter between length, width, and height fields. A semicolon is often used to separate data.
Omit Decimal	Select this check box to remove the decimal point character from the message. Only the decimal point character is removed, and digits before and after the decimal point remain.
Lead Padding	Enter characters to proceed the length, width, and height field.
Trail Padding	Enter characters to follow the length, width, and height field.
Append Units	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. A unit abbreviation (mm, cm, or in) will be appended after the separator.
Append Ready Status	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. NOTREADY or READY will be appended after the separator. NOTREADY indicates that this package result is not legal-for-trade.
Append NoDim Status	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. If the package is a NoDim, a reason code is appended after the separator. For example: NODIM_BOX_STACKED, NODIM_BOX_SIDES_TO_NOISY A NoDim reason indicates that this package result is not legal-for-trade.

Field Name	Action/Definition
Append Alibi Info	Select the check box to enable. When checked, a Separator text field is revealed. Enter a separator character in the text field provided. Alibi storage information is appended after the separator. This is a MAC address, followed by a 10 digit sequence number, dash, then 14 char date/time.

Format: 00:0e:13:05:00:01nnnnnnnnn-YYYYMMDDhhmmss



NOTE: Alibi is only available for controller model DC3000-1200 (OIML) and dimensioner model DM3610-3200 (OIML).

Append Volume	Select the check box to enable. When checked, Volume Units , Volume Field Width , and Volume Precision drop-down boxes are revealed.
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Volume Units Volume Field Width

Volume Precision

Select cubic Volume Units from the drop-down list. Selections include in³ (inches cubed), ft³ (feet cubed), cm³ (centimeters cubed), and dm³ (decimeters cubed).

Select a Volume Field Width of 2 to 8 from the drop-down list. This represents the number of characters available for the field width. If the value has fewer characters than the field width, it will be padded with zeros on the left.

Select a Volume Precision of 0 to 3 from the drop-down list. This is the number of digits appearing after the decimal point.

For example:

If **Volume Precision** is set at 1 (1 decimal place), **Volume Field Width** is set at 5, and the volume is 25.8 cm³, then the returned value in the host message will be **025.8**

If **Volume Precision** is set at 2 (2 decimal place), **Volume Field Width** is set at 8, and the volume is 25.8 cm³, then the returned value in the host message will be **00025.80**

Heart Beat Message	Enter a heart beat message in milliseconds if desired. If no other message is sent for the time period specified in Heart Beat Time Out , the specified heart beat message string is sent.
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NOTE: A time-out of zero disables the heart beat message.

Heart Beat Time Out (0-30,000 ms)	Enter an interval for heart beat time out in milliseconds. 0 = Disable Heart Beat Message, 1-30,000 = Delay before sending Heart Beat Message
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- When you have finished making changes, click **Update** to save or click **Reset** to revert to the previously saved values.

4.10 MODIFY SETTINGS | LOGGING OPTIONS

Use Logging Options to configure log output.

To configure the logs:

1. In the tree menu under **Modify Settings**, click **Logging Options**. The **Logging Options** window opens.

Field Name	Action/Definition
Cube3610 Log Enables,	For each type of log shown to the left, select options to determine how the log information is displayed. Select all that apply: <ul style="list-style-type: none"> • Critical • Error • Warning • Info • Debug (1-4)
MCM Log Enables,	
TrackManager Log Enables,	
LogManager Log Enables,	
WebManager Log Enables	
	 NOTE: Changes to these settings should be avoided unless requested by Datalogic.

2. When you have finished making your selections, click **Update** to save or click **Reset** to revert to the previously saved selections.

4.12 MODIFY SETTINGS | SAVE / RETRIEVE

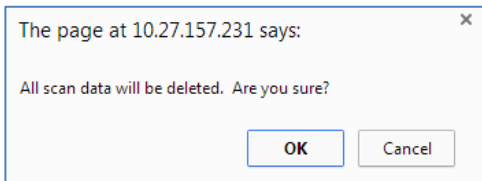
Use Save/Retrieve to save all the settings to the dimensioner and backup the settings to the backup module and/or file.

To use the Save/Retrieve functions:

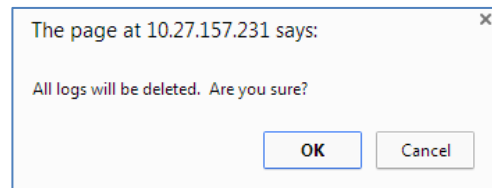
1. In the tree menu under **Modify Settings**, navigate to **Save/Retrieve**. The **Save/Retrieve** window opens.

2. Enter the appropriate information and use the form as described below.

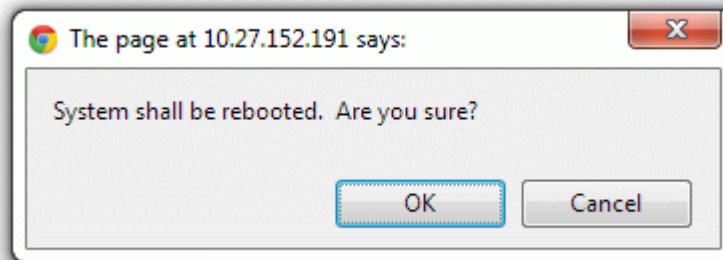
Field Name	Action/Definition
Save/Retrieve	
View Local Parameter XML	Click the linked text to view the local XML file (example): <pre> <DM3610Config Version="808466992"> <ParamRevLevel>8</ParamRevLevel> <Application> <DebugLevel>3</DebugLevel> <SaveScanDataMode>48</SaveScanDataMode> <SaveScanType>1</SaveScanType> <MaxScanDirSizeBytes>10000000</MaxScanDirSizeBytes> <ScanDataDirPath>/opt/cube3610/scandata</ScanDataDirPath> <SaveScanDataSlop>0.0</SaveScanDataSlop> <FindBeltScanCnt>2000</FindBeltScanCnt> <FindBeltTmoMSec>6000</FindBeltTmoMSec> </Application> <HostInterface> <Port>10000</Port> <IPAddress>192.168.3.50</IPAddress> </HostInterface> <ScanServerClient> <Enable>0</Enable> <Port>20010</Port> <IPAddress>192.168.3.70</IPAddress> <IncludeCRC>1</IncludeCRC> </ScanServerClient> <ExpectedBoxDimList> <Box1>36.0, 15.0, 15.0, 0.3</Box1> <Box2>18.0, 10.0, 10.0, 0.3</Box2> </pre>

Field Name	Action/Definition
	<i>Or</i> , right click and select Save as or Save link as to save the XML file to your computer.
Load Default Parameters	Click Load Default Parameters to apply the default software parameters to the system.
To load an XML file:	<ol style="list-style-type: none"> 1. Click Choose File and select the file you wish to load from the Explorer window. 2. Click Load Parameter File to load the selected file to the system.
Diagnostic Data	
Save Scan Data Mode	Select Off or On from the drop-down list.
Save Scan Data Type	Select NoDim Packages or All Packages from the drop-down list for the type of data you wish to save.
Max Scan Data Directory Size (MB)	Enter the maximum MBs you wish to allow for scan data storage.
View Scan Data	Click this link to display a list of available data files for download. Click a file to download it to your computer.
View Logs	Click this link to display a list of available log files for download. Click a file to download it to your computer.
Download Scan Data	Click this button to immediately download a compressed (zipped) folder containing all available Scan Data files.
Clear Scan Data	Click this button to clear (delete) all saved Scan Data files. A warning dialog appears. Click OK to clear the scan data, or click Cancel to return to the Save/Retrieve window.
	
Download Logs	Click this button to immediately download a compressed (zipped) folder containing all available Log files.

Field Name	Action/Definition
Clear Logs	Click this button to clear (delete) all saved log files. A warning dialog appears. Click OK to clear the logs, or click Cancel to return to the Save/Retrieve window.



Reboot DC3000	Click Reboot to re-initialize the system. A warning dialog appears. Click OK to reboot, or click Cancel to return to the Save/Retrieve window.
----------------------	--



4.13 MODIFY SETTINGS | INSCRIPTION (OIML CERTIFIED APPLICATIONS ONLY)

The inscription window provides an electronic label for OIML certified systems.



IMPORTANT: This window is only to be modified by the certification inspector for the Notifying Body.

To use the Inscription function:

1. In the tree menu under **Modify Settings**, navigate to **Inscription**. The **Inscription** window opens.

	Length	Width	Height	DM3610-3200 Dimensioning System DATALOGIC AUTOMATION SRL Monte San Pietro 40050 Italy EC Type Examination Certificate Number T10568	
min =	50mm	50mm	50mm		
max =	2500mm	1200mm	900mm		
d =	5mm	5mm	5mm		
	Minimum	Maximum	S/N Not_Set CE M 00 <input type="text"/>		
Conveyor Speed	Vmin=.03m/s	Vmax=3.15m/s			
Temperature Range	-10°C to 50°C				
Minimum Spacing	25mm				
Limitations of Use: rectangular opaque and irregular objects					
				Update	Reset

2. The certification inspector will enter a Notifying Body number in the white text field provided.
3. Click **Update**. The inspector is prompted for a password.

The page at 10.27.154.81 says:

Enter the password

OK Cancel

	Length	Width	Height	DM3610-3200 Dimensioning System DATALOGIC AUTOMATION SRL Monte San Pietro 40050 Italy EC Type Examination Certificate Number T10568	
min =	50mm	50mm	50mm		
max =	2500mm	1200mm	900mm		
d =	5mm	5mm	5mm		
	Minimum	Maximum	S/N Not_Set CE M 00 0122 <input type="text"/>		
Conveyor Speed	Vmin=.03m/s	Vmax=3.15m/s			
Temperature Range	-10°C to 50°C				
Minimum Spacing	25mm				
Limitations of Use: rectangular opaque and irregular objects					
				Update	Reset

4. Click **OK**. The Notifying Body number is displayed in the white text field.

	Length	Width	Height		
min =	50mm	50mm	50mm	DM3610-3200 Dimensioning System DATALOGIC AUTOMATION SRL Monte San Pietro 40050 Italy EC Type Examination Certificate Number T10568	
max =	2500mm	1200mm	900mm		
d =	5mm	5mm	5mm		
	Minimum	Maximum	S/N Not_Set CE M 14 0122		
Conveyor Speed	Vmin=.03m/s	Vmax=3.15m/s			
Temperature Range	-10°C to 50°C				
Minimum Spacing	25mm				
Limitations of Use: rectangular opaque and irregular objects					

4.14 DIAGNOSTICS

Use the **Diagnostics** menu tree selections to monitor your dimensioning system performance, view system messages, update the dimensioner firmware, and access online help. The Diagnostic windows include:



4.14.1 Diagnostics | Monitor

Use the **Diagnostics | Monitor** as the primary tool to monitor the dimensioner's operation and system information in real-time. Status indicators and vital statistics appear on a single screen, enabling you to effectively and efficiently detect and troubleshoot any problems that may occur.

To View the Monitor:

1. In the tree menu under **Diagnostics**, click **Monitor**. The **Monitor** window opens.

Diagnostics | Monitoring
?

System Status	System Information	Legal For Trade Status								
<div style="display: flex; justify-content: space-between;"> <div> <p>● Network 1</p> <p>● Tach</p> <p>● Good/No Dim</p> </div> <div> <p>● Network 2</p> <p>● Trigger</p> </div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Belt Speed</td><td>146 fpm</td></tr> <tr><td>Package Count</td><td>2909</td></tr> <tr><td>Valid Dim Count</td><td>2907</td></tr> <tr><td>No Dim Count</td><td>2</td></tr> </table>	Belt Speed	146 fpm	Package Count	2909	Valid Dim Count	2907	No Dim Count	2	<p>● LFT Ready Status</p>
Belt Speed	146 fpm									
Package Count	2909									
Valid Dim Count	2907									
No Dim Count	2									

Messages

```
Pkg Dim (LWH)= 305 200 200 mm;LFT_READY
```

Message Monitor

```
NETWORK_PORT1: [ 74]0305:0200:0200:mm;Ready;;00:0B:AB:42:D9:B520140605203245-00000736001310
```

Select a Port to Monitor

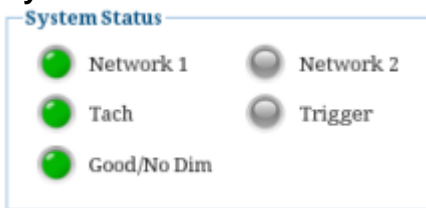
Serial Port #1
 Serial Port #2
 Network Port #1
 Network Port #2

2. View system information and interact with the **Monitor** as described below.

Field Name

Action/Definition

System Status



Network (1-2) – **GREEN** indicates connection to an active host. **Blank/Gray** indicates there is no active connection.

Tach – **GREEN** indicates the tachometer input. The LED is activated upon tachometer input regardless of tachometer source and indicates a non-zero belt speed.

Trigger – **GREEN** indicates the trigger input. The LED is activated upon trigger input regardless of trigger source (including software trigger).

Good/No Dim – **GREEN** indicates a good (valid) dimension has been calculated. **RED** indicates a no-dim.

System Information

System Information	
Belt Speed	146 fpm
Package Count	2909
Valid Dim Count	2907
No Dim Count	2

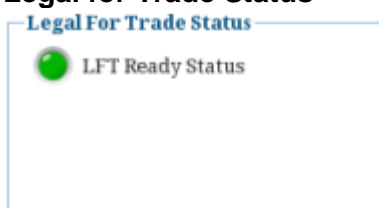
Belt Speed – The conveyor speed is displayed in feet per minute (fpm) or meters per second (m/s)

Package Count – Indicates the total number of packages that have passed through the system since last reset.

Valid Dim Count – Indicates the total number of valid package dimensions captured by the system since last reset.

No Dim Count – Indicates the total number of NO DIM packages passed through the system since last reset.

Legal for Trade Status



Ready – **GREEN** indicates the system settings meet Legal for Trade requirements. **RED** indicates that a system setting or performance does not meet Legal-for-Trade requirements. Click **Show** to display status details in the Message pane.

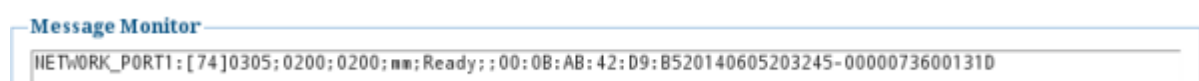
Messages


Displays diagnostic messages and dimension results.



Message Monitor

Displays the outgoing host message from the port selected below.

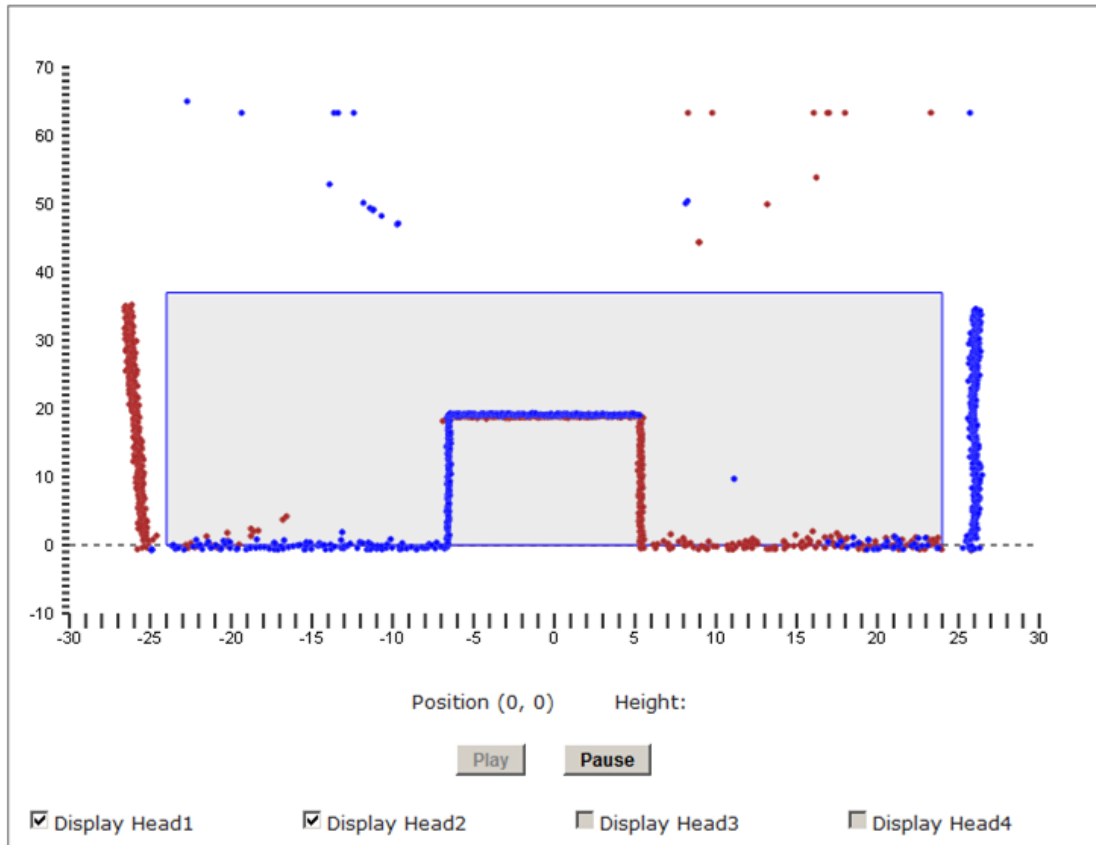


Field Name	Action/Definition
Option Buttons	Select an option button for None , Serial Port 1 , Serial Port 2 , Net Port 1 , or Net Port 2 to view messages for that connection.
	
Connect	Click Connect to re-establish communications between the Monitor page and the DC3000.

4.14.2 Diagnostics | DimView

Use the **Diagnostics | DimView** to view a graphical representation of the dimension point information captured for a package.

1. In the tree menu under **Diagnostics**, click **DimView**. The **DimView** window opens.



2. Select the check box next to the heads you want to display.

The **DimView** monitor is explained in the image below.

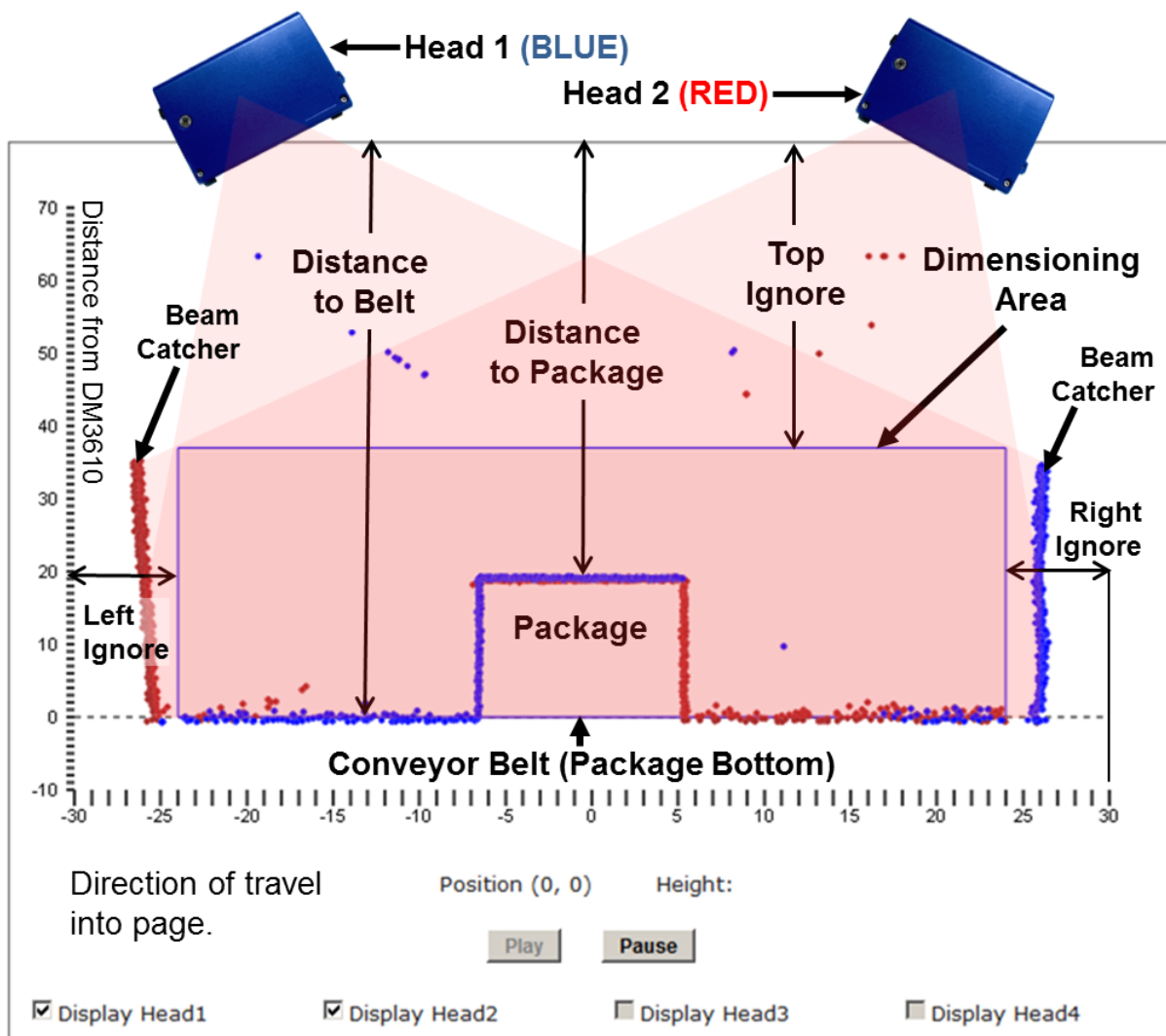


Figure 49: Understanding DimView

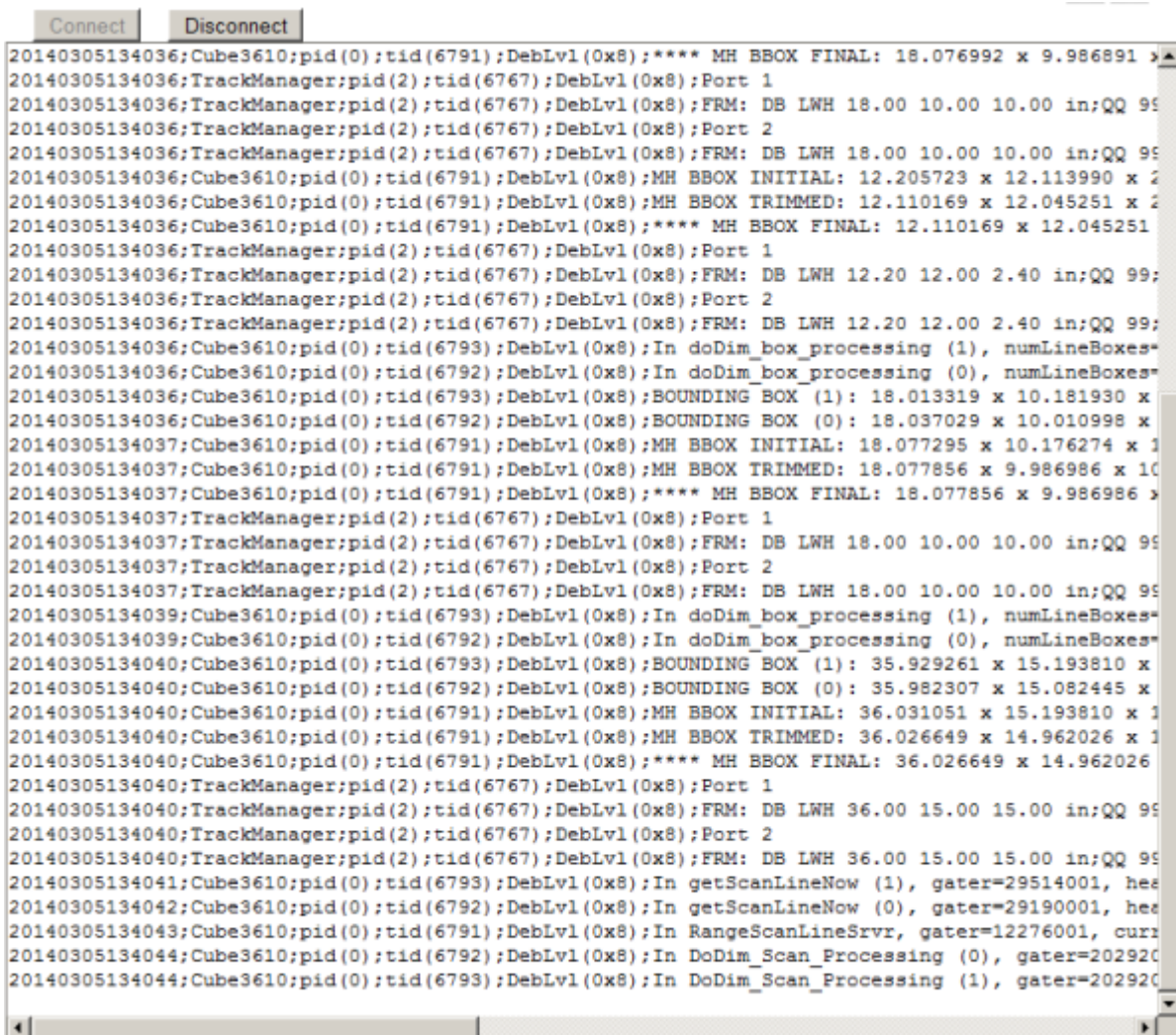
- When you have selected the heads to display, click **Play** to activate DimView or click **Pause** to freeze the image.

4.14.3 Diagnostics | Log Viewer

The **Diagnostics | Log Viewer** lets you review the performance logs saved by the dimensioner.

To View the Log Viewer:

1. In the tree menu under **Diagnostics**, click **Log Viewer**. The **Log Viewer** window opens.



The screenshot shows a window titled "Log Viewer" with two buttons at the top: "Connect" and "Disconnect". Below the buttons is a scrollable text area containing a list of log entries. Each entry starts with a timestamp and a process ID, followed by a description of the event and its parameters. The entries are as follows:

```

20140305134036;Cube3610;pid(0);tid(6791);DebLvl(0x8);**** MH BBOX FINAL: 18.076992 x 9.986891 x 9.986891
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 1
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 18.00 10.00 10.00 in;QQ 99
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 2
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 18.00 10.00 10.00 in;QQ 99
20140305134036;Cube3610;pid(0);tid(6791);DebLvl(0x8);MH BBOX INITIAL: 12.205723 x 12.113990 x 12.113990
20140305134036;Cube3610;pid(0);tid(6791);DebLvl(0x8);MH BBOX TRIMMED: 12.110169 x 12.045251 x 12.045251
20140305134036;Cube3610;pid(0);tid(6791);DebLvl(0x8);**** MH BBOX FINAL: 12.110169 x 12.045251 x 12.045251
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 1
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 12.20 12.00 2.40 in;QQ 99
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 2
20140305134036;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 12.20 12.00 2.40 in;QQ 99
20140305134036;Cube3610;pid(0);tid(6793);DebLvl(0x8);In doDim_box_processing (1), numLineBoxes=
20140305134036;Cube3610;pid(0);tid(6792);DebLvl(0x8);In doDim_box_processing (0), numLineBoxes=
20140305134036;Cube3610;pid(0);tid(6793);DebLvl(0x8);BOUNDING BOX (1): 18.013319 x 10.181930 x 10.181930
20140305134036;Cube3610;pid(0);tid(6792);DebLvl(0x8);BOUNDING BOX (0): 18.037029 x 10.010998 x 10.010998
20140305134037;Cube3610;pid(0);tid(6791);DebLvl(0x8);MH BBOX INITIAL: 18.077295 x 10.176274 x 10.176274
20140305134037;Cube3610;pid(0);tid(6791);DebLvl(0x8);MH BBOX TRIMMED: 18.077856 x 9.986986 x 9.986986
20140305134037;Cube3610;pid(0);tid(6791);DebLvl(0x8);**** MH BBOX FINAL: 18.077856 x 9.986986 x 9.986986
20140305134037;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 1
20140305134037;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 18.00 10.00 10.00 in;QQ 99
20140305134037;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 2
20140305134037;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 18.00 10.00 10.00 in;QQ 99
20140305134039;Cube3610;pid(0);tid(6793);DebLvl(0x8);In doDim_box_processing (1), numLineBoxes=
20140305134039;Cube3610;pid(0);tid(6792);DebLvl(0x8);In doDim_box_processing (0), numLineBoxes=
20140305134040;Cube3610;pid(0);tid(6793);DebLvl(0x8);BOUNDING BOX (1): 35.929261 x 15.193810 x 15.193810
20140305134040;Cube3610;pid(0);tid(6792);DebLvl(0x8);BOUNDING BOX (0): 35.982307 x 15.082445 x 15.082445
20140305134040;Cube3610;pid(0);tid(6791);DebLvl(0x8);MH BBOX INITIAL: 36.031051 x 15.193810 x 15.193810
20140305134040;Cube3610;pid(0);tid(6791);DebLvl(0x8);MH BBOX TRIMMED: 36.026649 x 14.962026 x 14.962026
20140305134040;Cube3610;pid(0);tid(6791);DebLvl(0x8);**** MH BBOX FINAL: 36.026649 x 14.962026 x 14.962026
20140305134040;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 1
20140305134040;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 36.00 15.00 15.00 in;QQ 99
20140305134040;TrackManager;pid(2);tid(6767);DebLvl(0x8);Port 2
20140305134040;TrackManager;pid(2);tid(6767);DebLvl(0x8);FRM: DB LWH 36.00 15.00 15.00 in;QQ 99
20140305134041;Cube3610;pid(0);tid(6793);DebLvl(0x8);In getScanLineNow (1), gater=29514001, hee
20140305134042;Cube3610;pid(0);tid(6792);DebLvl(0x8);In getScanLineNow (0), gater=29190001, hee
20140305134043;Cube3610;pid(0);tid(6791);DebLvl(0x8);In RangeScanLineSrvr, gater=12276001, curr
20140305134044;Cube3610;pid(0);tid(6792);DebLvl(0x8);In DoDim_Scan_Processing (0), gater=202920
20140305134044;Cube3610;pid(0);tid(6793);DebLvl(0x8);In DoDim_Scan_Processing (1), gater=202920

```

4.14.4 Diagnostics | Audit and Alibi


Use **Diagnostics | Audit** and **Alibi** to search for and view system audit trail and alibi logs.

To View Audit and Alibi:

1. In the tree menu under **Diagnostics**, click **Audit and Alibi**. The **Audit and Alibi** window opens.

The screenshot displays the 'Audit and Alibi' window interface. At the top, there is a 'Logging Options' section with two radio buttons: 'Audit Trail Log' (selected) and 'Alibi Storage Log'. Below this is the 'AATM Options' section, which includes three radio buttons: 'Query First Record' (selected), 'Query Last Record', and 'Query Storage Statistics'. There is also a 'Query Time Range' option. The 'Query Time Range' section contains two rows of dropdown menus for 'Start Time' and 'End Time'. Each row has dropdowns for Year, Month, Day, Hour, Minutes, and Seconds. The 'Start Time' dropdowns are set to 2014, 0, 0, 0, 3, 3. The 'End Time' dropdowns are set to 2014, 0, 0, 0, 3, 3. Below the dropdowns is a 'Get Updated Log File' button. At the bottom, there is a 'Log File' section with a text area containing the following text: 'Datalogic Automation Inc. DM3610 Dimensioning System #0 2014-02-25 22:41:45: ALGONODIMBADBELTPTS changed to 1[CRC OK]'

2. View system information and interact with the Monitor as described below.

Field Name	Action/Definition
Logging Options (Dimensioning-specific)	<p>Audit Trail Log: Opens the Audit Trail Log for viewing in the Log File section of the screen. Results are scrollable.</p> <p>Alibi Storage Log: Opens the Alibi Storage Log for viewing in the Log File section of the screen. Results are scrollable.</p>
AATM Options (Alibi and Audit Trail Manager)	<p>Query First Record: Displays the first record when selected.</p> <p>Query Last Record: Displays the last record when selected.</p> <p>Query Storage Statistics: Displays the storage space used and the remaining space available.</p> <p>Query Time Range: Select a Start Time and End Time by defining the Year, Month, Day, Hour, Minutes and Seconds for each.</p>
	<p>NOTE: For accurate Alibi and Audit management, the dimensioner clock is set to GMT (Greenwich Mean Time) at the factory and should never be changed.</p>
Get Updated Log File	<p>After making the desired selection from the option buttons, click Update to view the log in the Log File area of the screen.</p>

4.14.5 Diagnostics | Software Install

Use **Diagnostics | Software Install** to download software from or to install software to the DC3000 Dimensioning Controller.



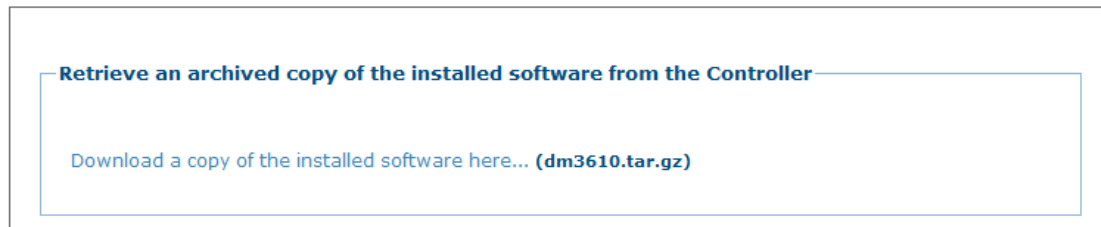
CAUTION: This function should only be performed under the guidance of Datalogic Technical Support.

To use the Software Install functions:

In the tree menu under **Diagnostics**, navigate to **Software Install**. The **Software Install** window opens.

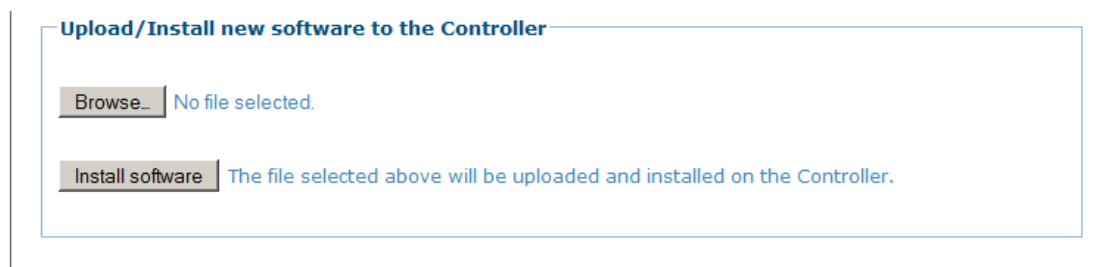
To Download a Copy of the Currently Installed Software:

Click on the *.gz file name linked in the top section of the **Software Install** window. Depending on your browser setup, the file will automatically download to the download folder, or an Explorer window will open allowing you to save the file wherever you wish.

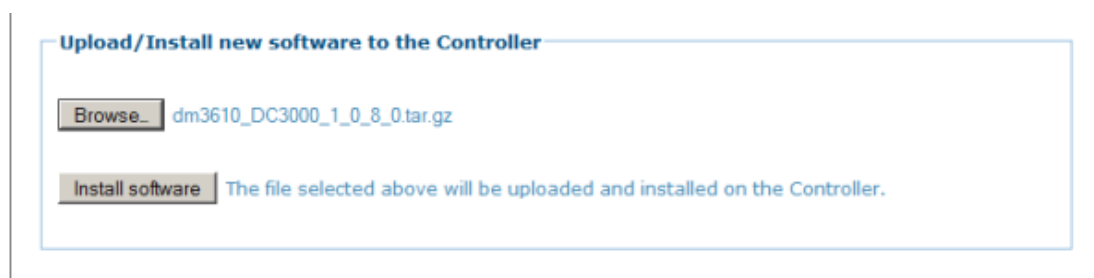


To Upload Software to the DC3000:

1. Click **Browse** in the bottom section of the **Software Install** window. An Explorer window opens.



2. Navigate to the *.gz file software file you wish to install. When you have selected the file, its name will appear next to the browse button.



3. Click **Install Software**. A progress indicator appears.



4. When the software has been installed, the following graphic appears.



4.14.6 Diagnostics | Help

Clicking **Diagnostics | Help** opens the full online help system for the DM3610 User Interface. You can use the **Contents**, **Index**, and **Search** options of the online help system to find information about and procedures for configuring and using the DM3610.

Contents Index Search - Search - GO

Home > Welcome

DATALOGIC

THE VISION IS YOURS

Welcome to DC3000 User Interface Online Help

The DC3000 Dimensioning Controller is the controller for Datalogic's multi-head dimensioning solution. The user interface provides an easy-to-use series of configuration and diagnostics features that enable you to set up and calibrate the dimensioning system.

Click on any of the links below to learn how to access and use some of the DM3610 dimensioner's best features:

- [Getting Started](#)
- [User Interface Basics](#)
- [Modify Settings](#)
- [Diagnostics](#)

Contact

Website: www.datalogic.com

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DC3000 User Interface Online Help Revision 1.0
This manual refers to software package 1.0.11.0 and later.

5 DIMENSIONING SETUP AND CALIBRATION

This chapter provides details on how to set up and calibrate the Two-Head Dimensioning System for normal operation and references several sections in this manual. For a step-by-step procedure for installing and calibrating this system, see the *Two-Head Dimensioning System Installation Guide*.



IMPORTANT: The procedures outlined in this chapter should only be performed by a Datalogic trained technician.

Training is available through specific Service Programs and Maintenance Agreements. See our website at www.datalogic.com.

5.1 SYSTEM SETUP

Install the structure, Universal Mounting Brackets (UMBs), DM3610 dimensioners, DC3000 Dimensioning Controller and other equipment as indicated in *chapter 2, Mechanical Installation*.



IMPORTANT: The DM3610 Dimensioners must be pre-configured before they are mounted to their UMBs as shown in *section 2.4.12* of this manual.

Install the system cabling as described in *chapter 3, Electrical Installation*.

5.2 ADJUST THE TILT AND SKEW OF THE DM3610 DIMENSIONERS

When the equipment and cabling has been installed as described in *chapters 2 (Mechanical Installation)* and *3 (Electrical Installation)*, apply power to the system.

5.2.1 Adjust the Tilt

1. With the DM3610 dimensioners powered up and the lasers active, set the largest test box (see **Calibration Kit** in *Two-Head Dimensioning Reference Manual, Chapter 1 Introduction*) perpendicular to the conveyor with its edge even with the edge of the conveyor.
2. While keeping the test box aligned with the conveyor, adjust its position until the laser is just touching the edge of the box. The goal is to adjust the alignment of the DM3610 until the laser is parallel to the edge of the test box.

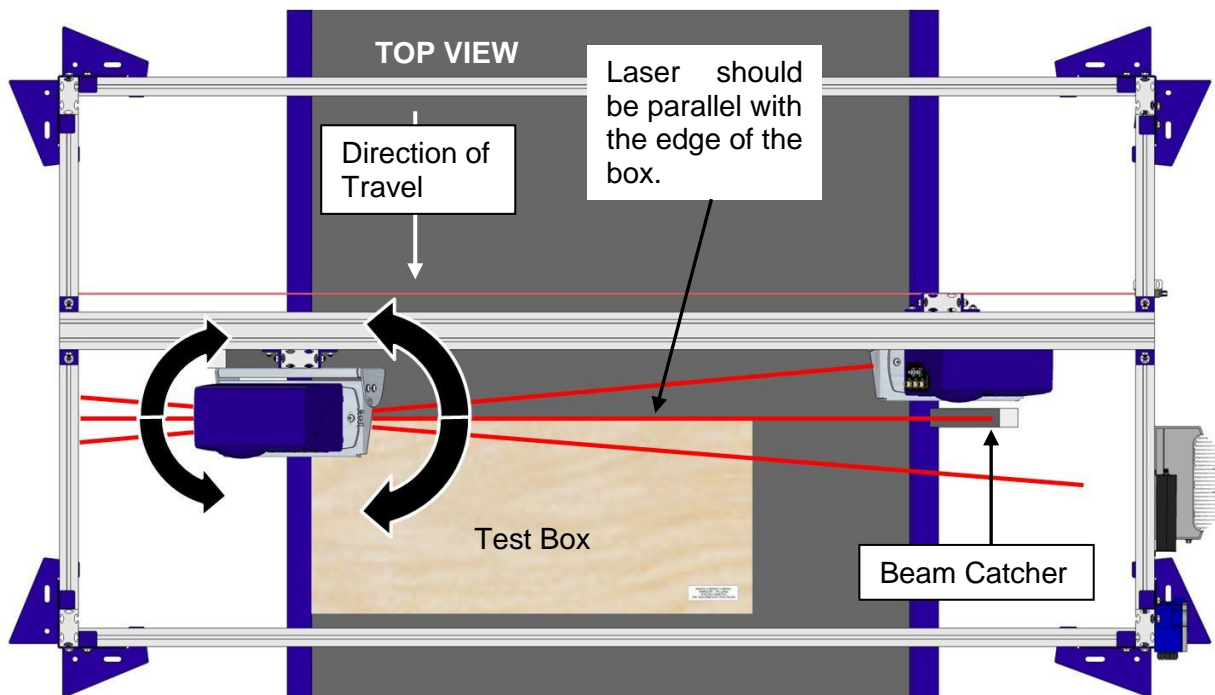


Figure 50: Adjusting the Tilt

3. To adjust the laser tilt, loosen the screws securing the UMB Mounting Plate to the UMB and using a flathead screwdriver carefully pry the plate back and forth until the laser is exactly parallel to the edge of the test box. When adjusted correctly, tighten the UMB Mounting Play screws.

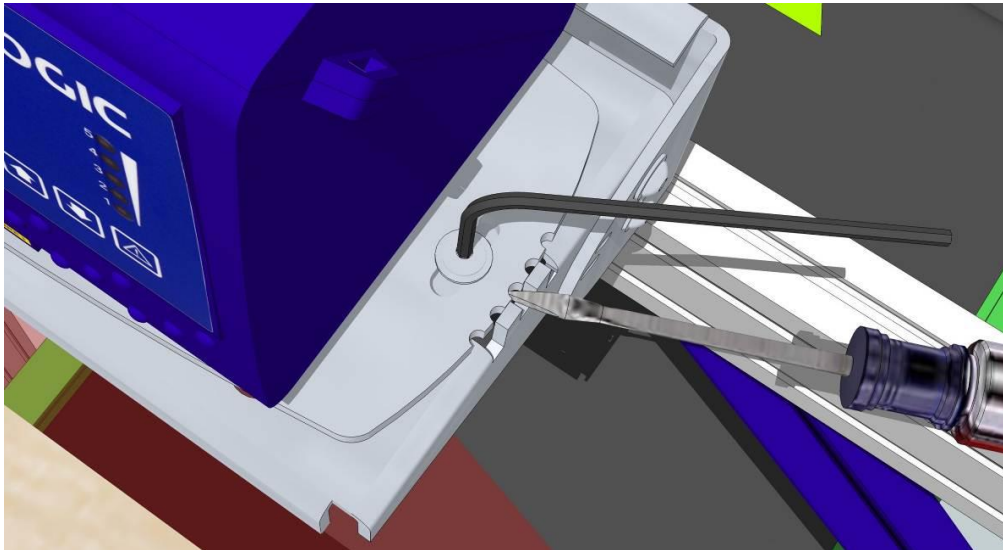


Figure 51: Adjusting UMB Mounting Plate with a Screwdriver

5.2.2 Adjust the Skew

To adjust the laser skew, loosen the screws securing the front of each UMB to its back and use a flathead screwdriver to carefully pry the front of the UMB up and down using the adjustment slots until the laser is exactly 90° to the conveyor. Again, use the edge of the box as a guide. When adjusted correctly, tighten the UMB screws. Repeat this process for each dimensioning head.

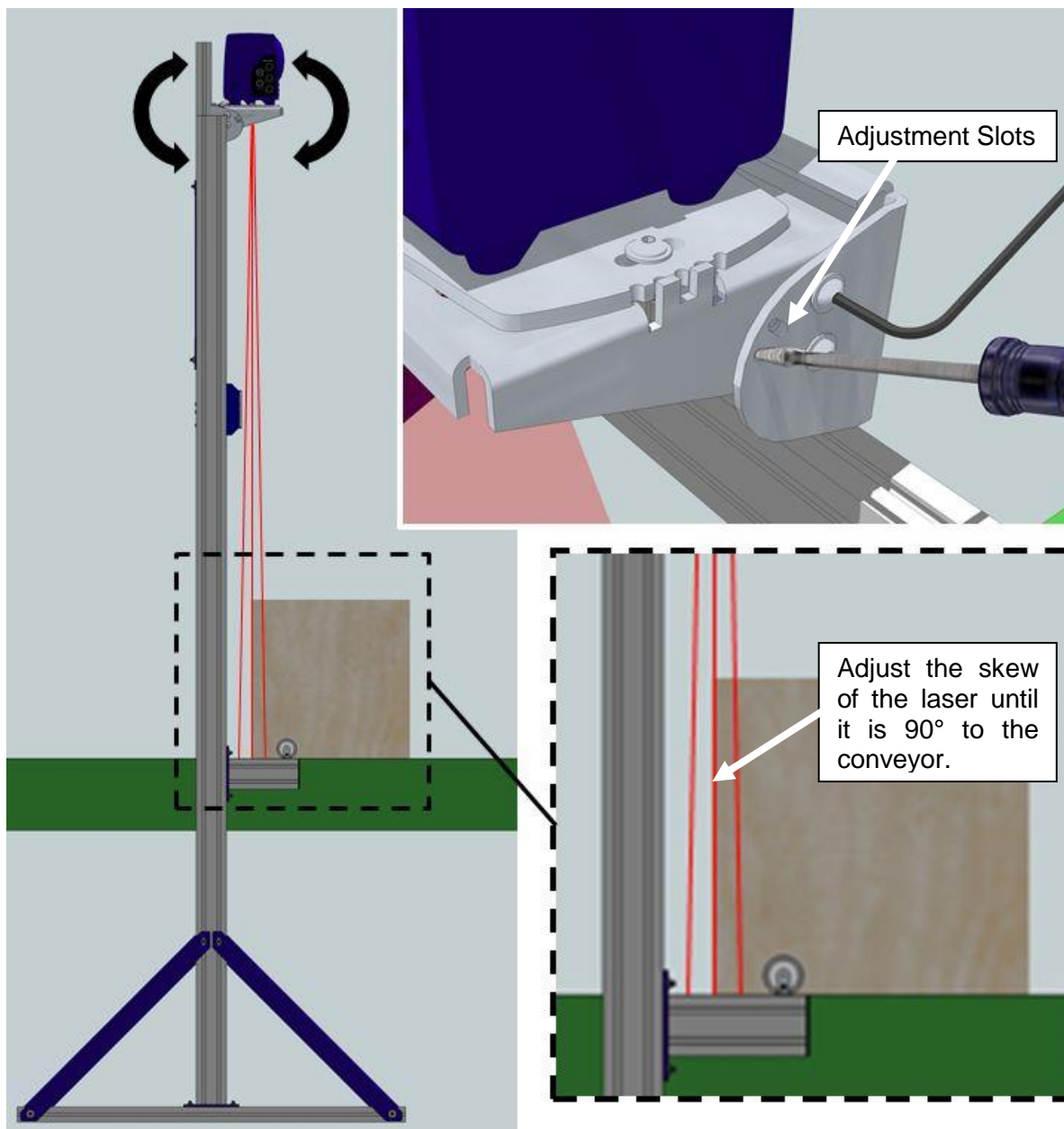


Figure 52: Adjusting the Skew

5.3 ELECTRONICALLY ALIGNING THE SYSTEM LASERS

5.3.1 Adjusting the Field of View and Angle Offset for Each Dimensioner (DM3610 User Interface)

The field of view (FOV) and angle offset of *each* DM3610 dimensioner must be adjusted manually using the **DM3610 User Interface** to cover its portion of the dimensioning area over the conveyor. Perform the following adjustments for **each** DM3610:

1. Configure your laptop PC's IP Address to be in the same network as the DM3610's IP Address (example: 192.168.3.1) See *section 4.1.2*.
2. Connect your laptop computer to the DM3610 HEAD1 HOST port using either the CAB-ETH-M0x M12-IP67 ETHERNET CABLE or CBL-1534-0.2 ADAPT.CABLE ETH M12-TO-RJ45F.
3. Open a browser on the laptop computer, and type in the default IP address for the DM3610 to which your PC is attached (HEAD1 - 192.168.3.101, HEAD2 - 192.168.3.102). The **DM3610 User Interface** opens in the browser window.



NOTE: Details on using the DM3610 User Interface are available in the **DM3610 Dimensioner Reference Manual, Chapter 4**.

4. Open a browser tab for both **HEAD1** (192.168.3.101) and **HEAD2** (192.168.3.102), and log on to their user interfaces.
5. From the menu tree **Modify Settings**, navigate to **Dimensioning | Calibration**. The Calibration window opens.

Dimensioning Area

Scan Points (100-1000)	<input type="text" value="900"/>
Field of View (2-73°)	<input type="text" value="54"/>
Angle Offset (0-40°)	<input type="text" value="26.3"/>

6. Adjust the three following parameters in the **DM3610 User Interface** for each dimensioner in **Modify Settings | Dimensioning | Calibration**:
- Set **Scan Points** to **900** (default) unless authorized by Datalogic.
 - **Field of View**: Adjust FOV to cover largest system boxes at edges of conveyor.
 - **Angle Offset**: Adjust the **Angle Offset** to cover largest system boxes at edges of conveyor. In order to achieve a satisfactory calibration, you will need to go back and forth between the **Field of View** and **Angle Offset** parameters making single integer adjustments.

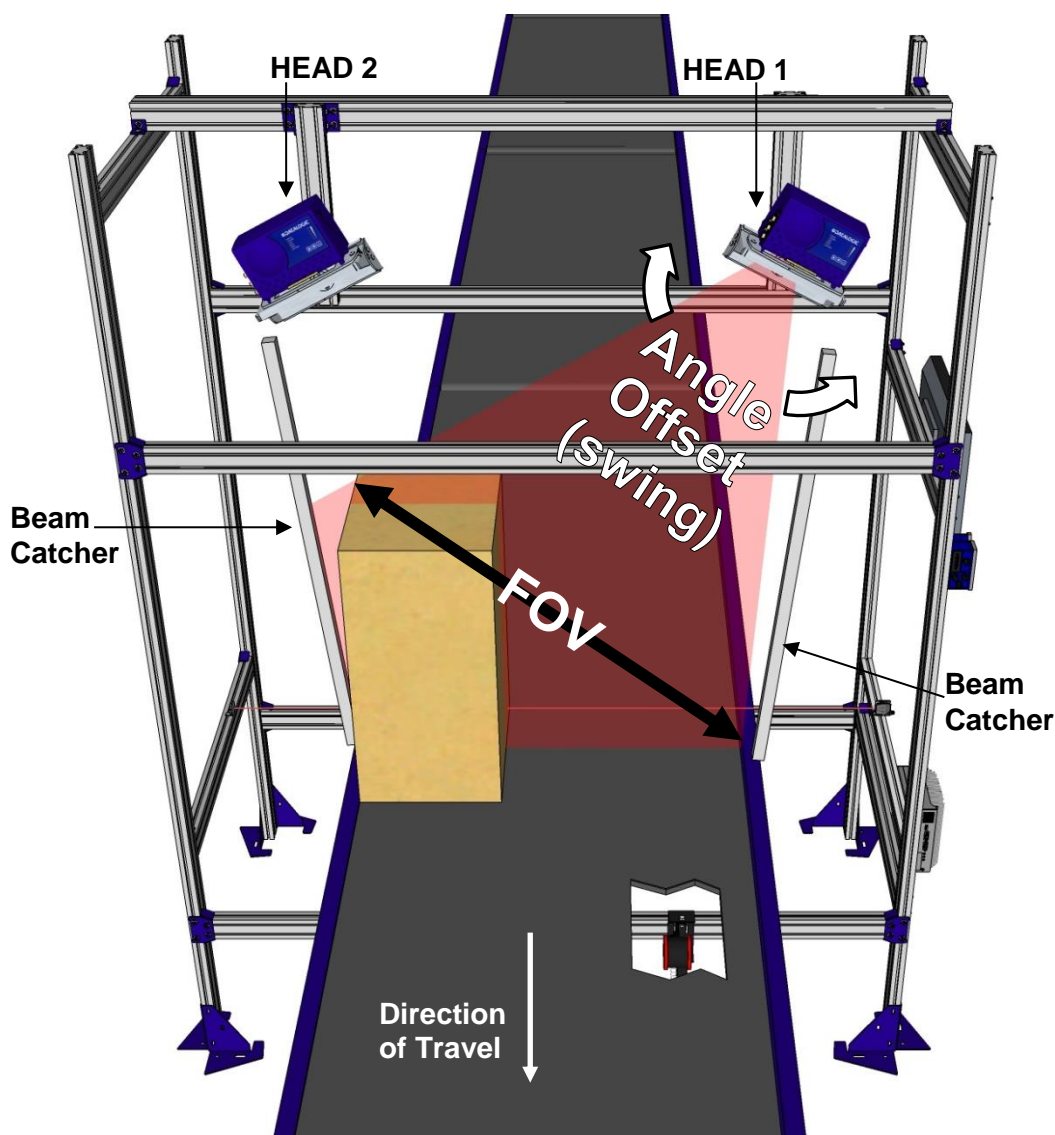
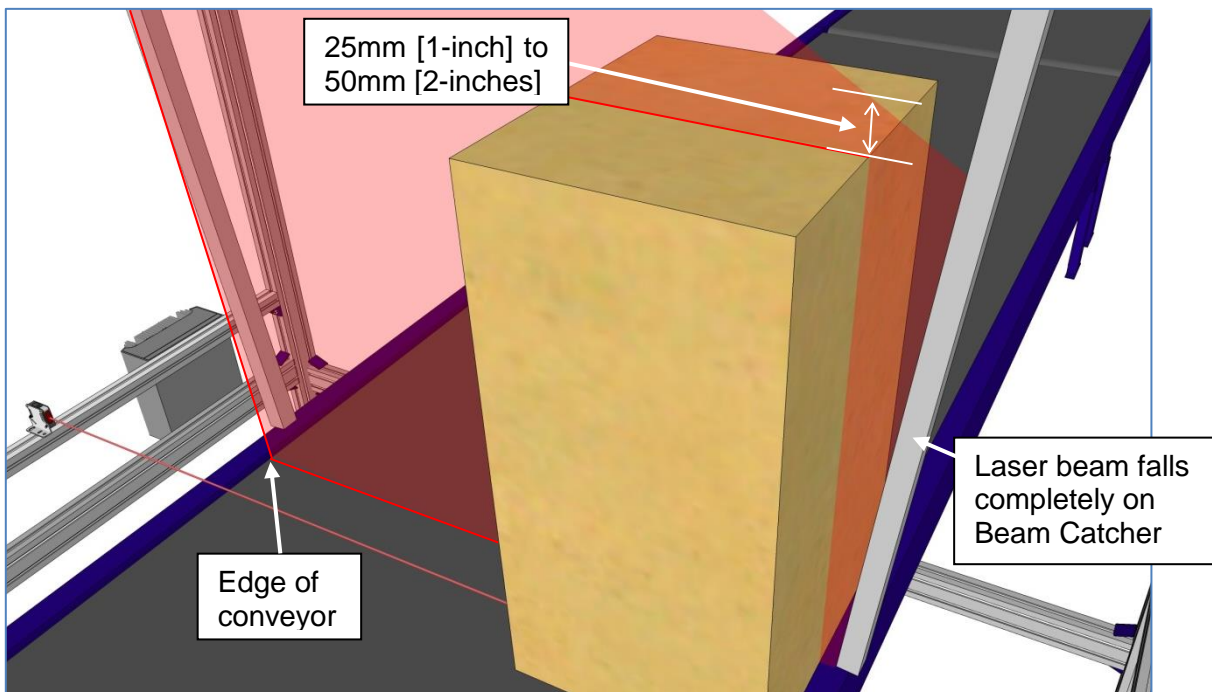


Figure 53: Field of View (FOV) and Angle Offset

The laser line on the near side must hit the very edge of the dimensioning area, and the laser line on the far side should cover the entire top of the box and extend from 25mm [1-inch] to 50mm [2-inches] beyond the top outside edge of the box. The laser beam on the opposite side of the belt must be completely caught by the beam catcher.

To adjust the Field of View and Angle Offset (Viewing Downstream):

1. Starting with **HEAD1**, place the tallest box defined by the application on the side of the belt furthest from **HEAD1**.
2. Change the **Field of View** of **HEAD1** to 20, and click **Update**.
3. Increase the **Field of View** by 10-degree increments until the beam spans across the dimensioning area reaching from just beyond the top of the box to just beyond the edge of the conveyor below **HEAD1**.
4. Then, make small adjustments to the **Field of View** and **Angle Offset** for **HEAD1** until the laser beam covers the dimensioning area. The right side of the laser beam should extend approximately 25mm [1-inch] to 50mm [2-inches] beyond the top outside edge of the box, and left side of the laser beam should end at the edge of the conveyor. Make sure the right side of the beam falls completely on the beam catcher.

**Figure 54: Laser Beam Alignment**

5. Moving on to **HEAD2**, place the tallest box defined by the application on the side of the belt furthest from **HEAD2**.
6. Change the **Field of View** of **HEAD2** to 20, and click **Update**.
7. Increase the **Field of View** of by 10-degree increments until the beam spans across the dimensioning area from just beyond the top of the box to just beyond the edge of the conveyor below **HEAD2**.
8. Then, make small adjustments to the **Field of View** and **Angle Offset** for **HEAD2** until the laser beam covers the dimensioning area. The left side of the laser beam should extend approximately one inch beyond the top surface of the box, and the right side of the laser beam should end at the edge of the conveyor. Make sure the left side of the laser beam falls completely on the beam catcher.

5.4 CONFIGURE THE SYSTEM USING THE DC3000 USER INTERFACE

1. Turn on the DC3000 Dimensioning Controller.
2. Connect your laptop computer to the DM3610 HEAD1, HOST port using either the CAB-ETH-M0x M12-IP67 ETHERNET CABLE or CBL-1534-0.2 ADAPT.CABLE ETH M12-TORJ45F.



NOTE: If the DC3000 is equipped with a keyboard and mouse, the DC3000 User Interface can be accessed by opening a browser on the DC3000 and entering an IP address of 192.168.3.70.

3. Open a browser and enter an IP address of 192.168.3.70. The **DC3000 User Interface** opens.

The screenshot shows the DC3000 User Interface. The top header is blue with 'DC3000' on the left and the 'DATALOGIC' logo on the right. Below the header is a sidebar with a tree view of settings categories: 'Modify Settings' (highlighted in yellow), 'Controller Configuration', 'System Configuration', 'Dimensioning', 'Tach/Trigger/Transmit', 'Network', 'Serial', 'Logging Options', 'Save/Retrieve', and 'Inscription'. Below the sidebar is a 'Diagnostics' button. The main content area contains a login form with the following elements: 'User ID' text label and input field, 'Password' text label and input field, 'Language' text label and a dropdown menu set to 'ENGLISH', a 'Log On' button, and a blue link labeled 'Inscription'.

4. Log on to the DC3000 User Interface. The default **User ID** is DM3610, and default **Password** is DM3610.



NOTE: For a detailed description of the DC3000 User Interface, see *chapter 4*.

- From the menu tree under **Modify Settings**, select **Controller Configuration**. The **Controller Configuration** window opens.

Controller Information





Controller Name

Controller Model

Serial Number

Software Name/Revision

LFT Components

Status	App Name	Expected md5	Actual md5
	Cube3610	4e6d88b94ad9b87918dcfd7e06152499	4e6d88b94ad9b87918dcfd7e06152499
	MCM	eddfbb285f438ce31cb1554d563fe939	eddfbb285f438ce31cb1554d563fe939
	DimModule Library	de98b905fb95c7750858f39efa95169f	de98b905fb95c7750858f39efa95169f
	LftParamUtil	4bbc7c8a7ae41f20fbba5998b9f5b518	4bbc7c8a7ae41f20fbba5998b9f5b518

Configuration Options

Units

Network Access Options

Username



New Password

Confirm Password





- Make sure **Controller Model** and **Software Name/Revision** are correct for your application.

7. In the menu tree under **Modify Settings**, select **System Configuration**. The **System Configuration** window opens.





System LFT Status

	One or more LFT component(s) not ready
	System not in 'CERT' mode

DM3610's in this Cluster

Online	Ready	MAC Address	IP Address	Port	Name	Version	Action
		00:0E:13:05:00:01		10001			Delete
		00:0E:13:05:00:02		10002			Delete





DM3610's not in this Cluster

Online	Ready	MAC Address	IP Address	Port	Name	Action
		00:0E:13:05:01:3B	192.168.3.101	-	HEAD 1	Ignore this DM3610 ▼ Blink
		00:0E:13:12:34:56	192.168.3.102	-	HEAD 2	Ignore this DM3610 ▼ Blink

The DC3000 System Configuration window identifies two separate DM3610 fields, **DM3610's in this Cluster** and **DM3610's not in this Cluster**. The **DM3610's in this Cluster** field identifies DM3610's that are connected to the Multi-Headed systems network. The **DM3610's not in this Cluster** field identifies units that have been located but have not yet been included into the Multi-Headed system network.

8. In the **Action** drop-down list of the **DM3610's not in this Cluster** section, select **Replace** for **HEAD1** and **HEAD2**.

DM3610's not in this Cluster

Online	Ready	MAC Address	IP Address	Port	Name	Action
		00:0E:13:05:01:3B	192.168.3.101	-	HEAD 1	Replace 00:0E:13:05:00:01 ▼ Blink
		00:0E:13:12:34:56	192.168.3.102	-	HEAD 2	Replace 00:0E:13:05:00:02 ▼ Blink

- Click **Update**. The HEAD1 and HEAD2 should now have replaced the placeholder listed under DM3610's in this cluster.

System LFT Status

System not in 'CERT' mode

DM3610's in this Cluster

Online	Ready	MAC Address	IP Address	Port	Name	Version	Action
		00:0E:13:05:01:3B	192.168.3.101	10001	HEAD 1	DM3610_RELEASE;1.6(19)	<input type="button" value="Delete"/>
		00:0E:13:12:34:56	192.168.3.102	10002	HEAD 2	DM3610_RELEASE;1.6(19)	<input type="button" value="Blink"/>

DM3610's not in this Cluster

Online	Ready	MAC Address	IP Address	Port	Name	Action

5.4.1 DC3000 Dimensioning Settings and Calibration (DC3000 User Interface)

- In the menu tree under **Modify Settings**, select **Dimensioning | Settings**. The **Dimensioning | Settings** window opens.

Outputs

Units	mm	▼
Length Reporting	Direction of Travel	▼
Certification Mode	Off	▼
Length, Width Resolution (d)	5 mm	▼
Height Resolution (d)	5 mm	▼

Package Size Options

Minimum Package Size	Length (mm)	50.0
	Width (mm)	50.0
	Height (mm)	50.0
Maximum Package Size	Length (mm)	2500.0
	Width (mm)	1200.0
	Height (mm)	900.0
Discard Package Size	Length/Width (mm)	12.7
	Height (mm)	12.7

- Under **Outputs**, make sure **Certification Mode** is set to **Off**.

- Adjust the settings in **Dimensioning | Settings** to match your applications requirements (Min/Max package size, units, and etc.) (see chapter 4).



NOTE: Be sure to turn **Certification Mode** back **On** after calibration in Legal for Trade applications in both the DC3000 Dimensioning Controller and DM3610 dimensioning heads.

- Lay pieces of white paper across the conveyor under the laser lines to avoid any irregularities in the conveyor belt from affecting the data.

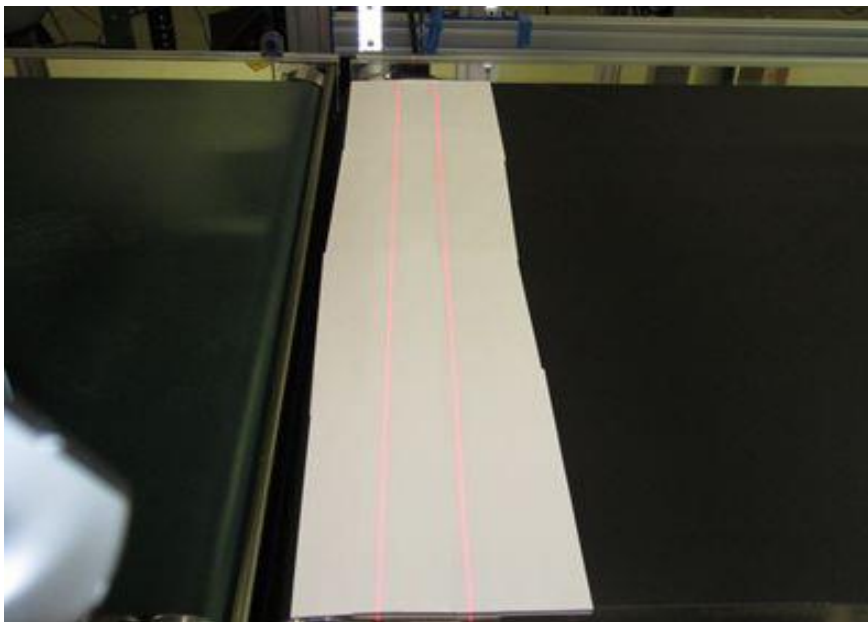


Figure 55: Paper laid across conveyor

- In the menu tree under **Modify Settings**, select **Dimensioning | Calibration**. The Calibration window opens.

Belt Analysis

Side Margins (in)

Head Pitch Estimate 1 (°)

Head Pitch Estimate 2 (°)

Dimensioning Area

Head Index		1		2		3	4
		Current	Find Belt	Current	Find Belt		
Scanner Height	(in)	67.806		66.742			
Left Ignore	(in)	-5.786		49.188			
Right Ignore	(in)	53.822		-0.987			
X Shift	(in)	0		2.6			
Y Shift	(in)	-29.804		25.088			
X Rotation	(°)	28.292		-31.128			

6. Enter a width of the side margins used to create transition on the outer edge of the scanning area. (see section 4.6.2).



NOTE: Side margins of equal width are used to create transitions on the scan line when there are no side rails or edge transitions.

If the spacers are placed inside the belt width, the spacer width must be entered into the **Side Margins** text field. If the spacers are placed outside the edge of the belt, or if side rails are present, a "0" must be entered into the **Side Margins** text field for the spacer width.



IMPORTANT: Only one side margin is placed in the laser beam for each DM3610. One in the laser beam of HEAD1 at the far edge of the conveyor, and one for HEAD2 at the far edge of the conveyor, as shown in the illustrations below. Each side margin should only intersect one laser.

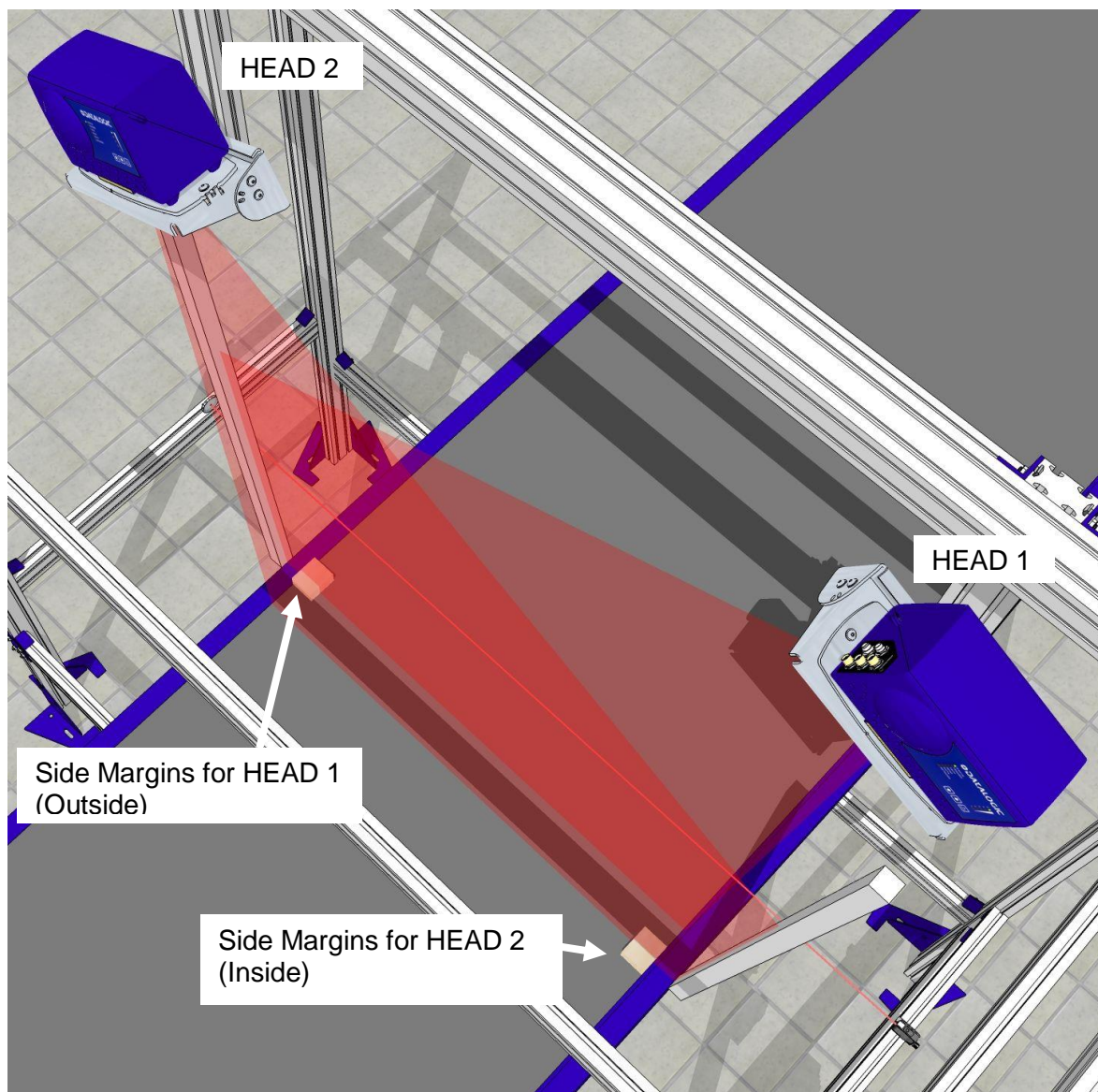


Figure 56: Spacer placement

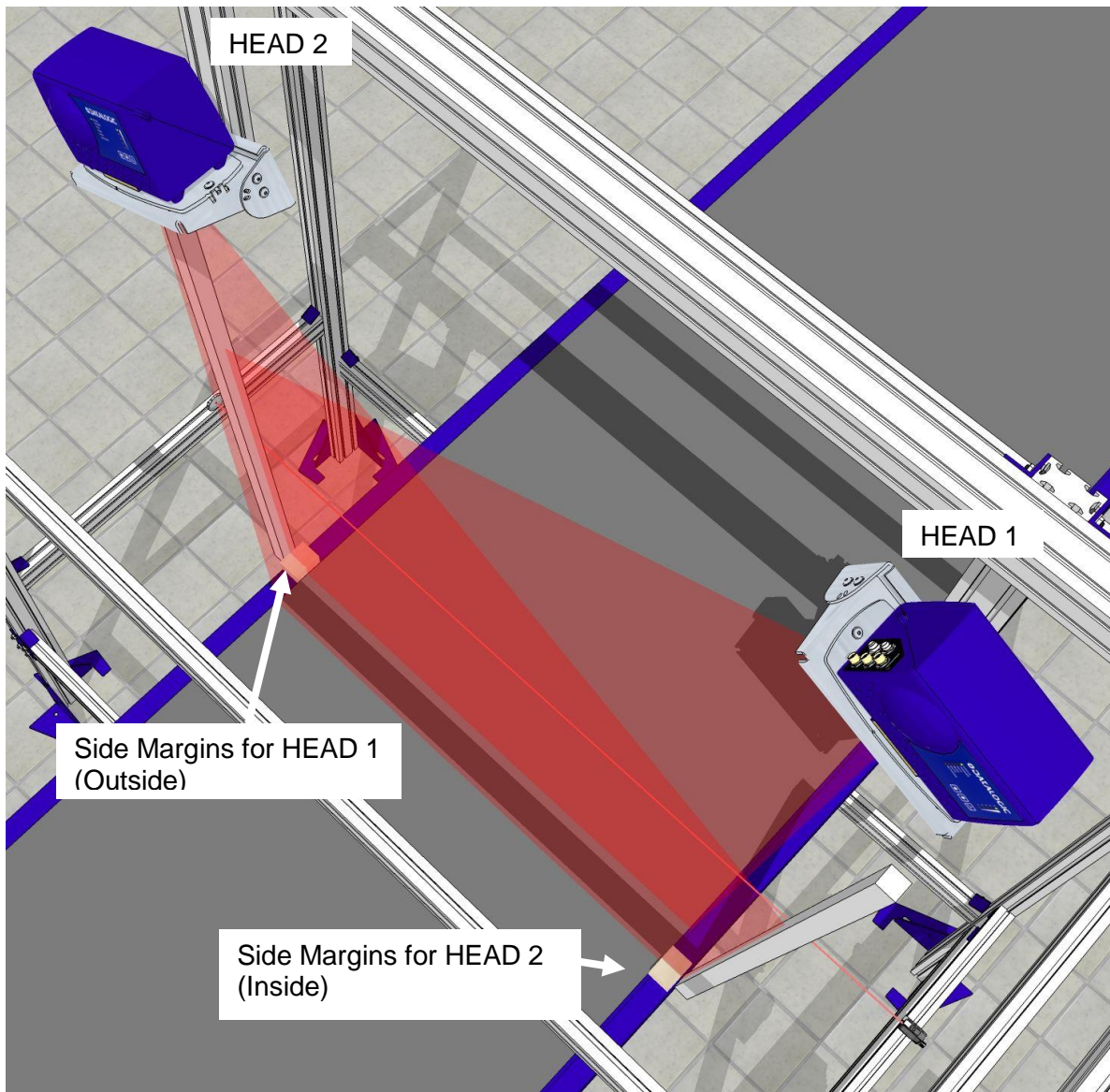


Figure 57: Spacer placement

7. Enter **Head Pitch Estimate 1** (HEAD1) and **Head Pitch Estimate 2** (HEAD2) based on the angles from the application specifications. The **Head Pitch Estimate** helps each head differentiate the conveyor bed from the beam catcher.

Belt Analysis	
Side Margins	<input type="text"/> (in)
Head Pitch Estimate 1	<input type="text"/> (°)
Head Pitch Estimate 2	<input type="text"/> (°)

- Click **Find Belt**. Dimensioning parameters are automatically loaded into the **Dimensioning Area**.

Belt Analysis

Side Margins (in) **Find Belt** **Use Belt**

Head Pitch Estimate 1 (°)

Head Pitch Estimate 2 (°)

Dimensioning Area

Head Index	1		2		3	4
	Current	Find Belt	Current	Find Belt		
Scanner Height (in)	67.780	67.780	66.746	66.746		
Left Ignore (in)	-5.802	-5.802	49.228	49.228		
Right Ignore (in)	53.834	53.834	-1.001	-1.001		
X Shift (in)	<input type="text" value="0"/>		<input type="text" value="2.6"/>			
Y Shift (in)	-29.818	-29.818	25.115	25.115		
X Rotation (°)	28.308	28.308	-31.140	-31.140		

Update **Reset**

- Click **Use Belt**. The **Find Belt** parameters are accepted.
- Enter 0.000 for the **X Shift** of HEAD1.
- Measure the **X Shift** distance between the scan lines from HEAD1 to HEAD2. This number will be positive.

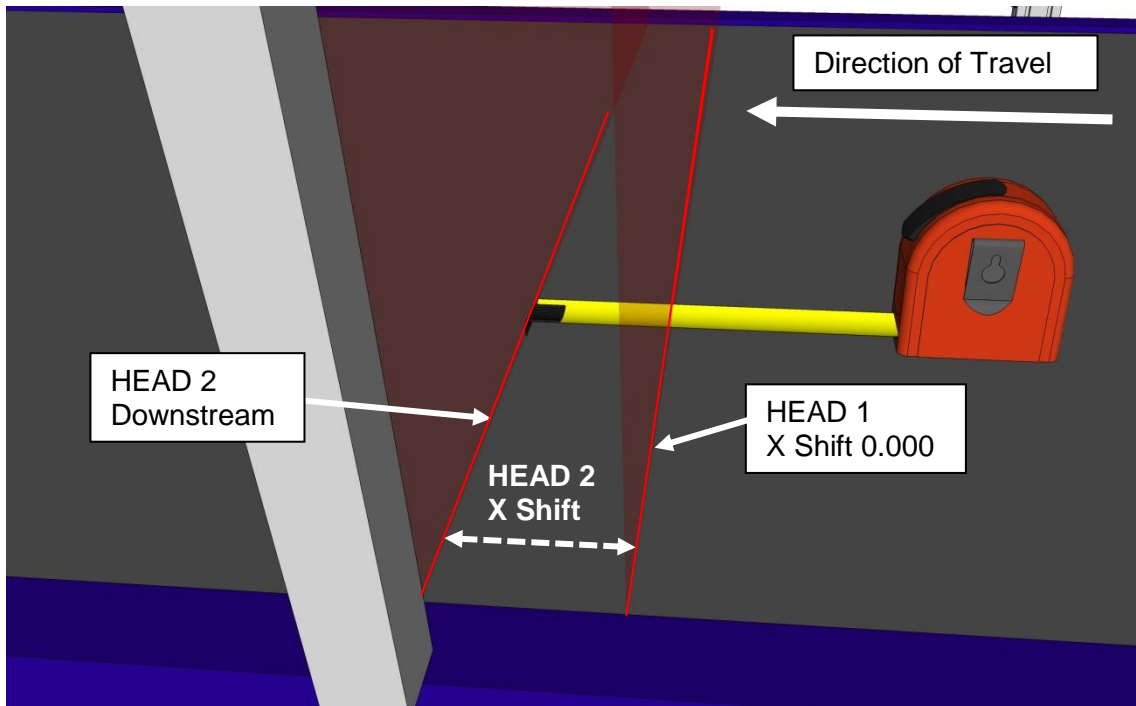


Figure 58: X Shift Measurement

- Enter the measured distance between the laser lines in the **X Shift** for HEAD2. This number will be positive.
- Click **Update**.

5.4.2 Tach/Trigger/Transmit (DC3000 User Interface)

Use **Tach/Trigger/Transmit** to set up the tachometer source and trigger source. A range of settings are definable based on use of hardware or software sources (see section 4.7).

1. In the menu tree under **Modify Settings**, select **Tach/Trigger/Transmit**. The **Tach/Trigger/Transmit** window opens.

The screenshot shows the 'Tach/Trigger/Transmit' configuration window. It is divided into three main sections: 'Tachometer', 'Trigger', and 'Transmit'.
- **Tachometer**: 'Pulse per in' is set to 16.00, and 'Tach Scale Factor' is set to 1.
- **Trigger**: 'Trigger Source' is set to 'Hardware Trigger', 'Debounce Duration (ms)' is set to 5, and 'Trigger Reference Point' is set to 6.0 in.
- **Transmit**: 'Transmit Edge' is set to 'Trailing Edge', and 'Transmit Point' is set to 60.0 in.
At the bottom right, there are 'Update' and 'Reset' buttons.

2. Measure the distance from the photoelectric sensor and the scan line of HEAD1, and enter this measurement in the **Trigger Reference Point** text field. Use a box set just along the photoelectric sensor laser to aid in measuring.

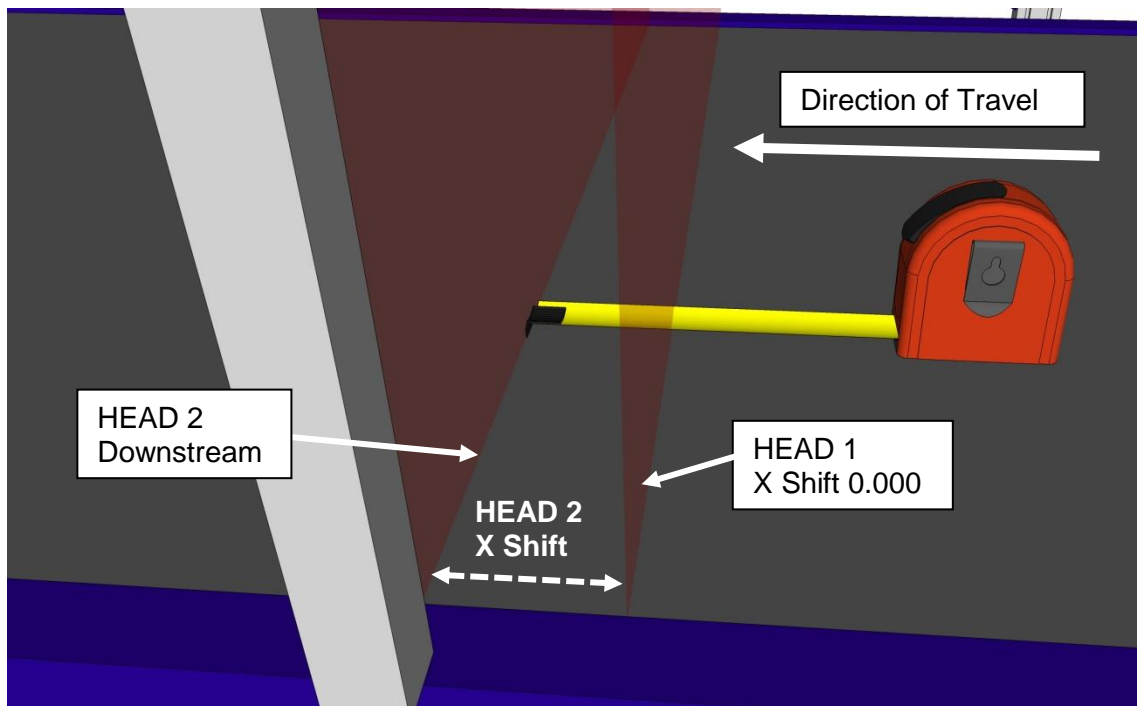


Figure 59: Trigger Reference Point measurement

3. Click **Update**.
4. In **Modify Settings | Tach/Trigger/Transmit**, make sure:
 - **Trigger Source** is set to **Application Specifications**
 - **Pulse per in [cm]** (16ppi [6.4 pulses per cm] or 20ppi [8 pulses per cm] should be set to match the tachometer switch setting



NOTE: The trigger reference point is in reference to HEAD1 regardless of where HEAD2 is located (upstream or downstream).

5. Click **Update** when you have finished making changes.

5.5 DYNAMIC CALIBRATION

After you have set up the dimensioning settings and calibration in the DC3000 User interface, you must check the accuracy of the system by running test boxes through the system. Dimensions returned when a box is run through the system must fall below the outside tolerance required by your application.

Example: If your application calls for a tolerance of 0.2 inches in Width, Length, or Height, you must calibrate your system until the values returned fall below 0.2 inches. In other words, a value of +0.19 inches may be acceptable, while a value of 0.21 is not.

To Dynamically Calibrate the Dimensioning System:

1. If you do not already have it running, open the **DC3000 User Interface** in a browser and log on as explained previously.
2. From the menu tree of the under **Diagnostics**, select **Log Viewer**. The **Log Viewer** window opens.
3. Turn on the conveyor and run a test box.
4. Check the results in **Diagnostics | Log Viewer**.

The MH BBOX FINAL results show the calculated data from the scan information for HEAD1 and HEAD2. This number should match the length, width and height of the test box (within the system tolerance). If the length doesn't fall within tolerances:

```

Diagnostics | Log Output
Connect Disconnect
20140331200821;Cube3610;pid(0);tid(1021);DebLvl(0x8);Accepted a Parameter Update client connectio
20140331200822;WebManager;pid(4);tid(1036);DebLvl(0x8);Reload Sent[4][608 vs 2656]
20140331200822;Cube3610;pid(0);tid(1021);DebLvl(0x8);Accepted a Parameter Update client connectio
20140331200849;Cube3610;pid(0);tid(1030);DebLvl(0x8);In doDim_box_processing (0), numLineBoxes=13
20140331200849;Cube3610;pid(0);tid(1031);DebLvl(0x8);In doDim_box_processing (1), numLineBoxes=14
20140331200850;Cube3610;pid(0);tid(1030);DebLvl(0x8);BOUNDING BOX (0): 9.042765 x 5.150073 x 3.03
20140331200850;Cube3610;pid(0);tid(1031);DebLvl(0x8);BOUNDING BOX (1): 9.060511 x 5.046015 x 2.93
20140331200850;Cube3610;pid(0);tid(1029);DebLvl(0x8);MH BBOX INITIAL: 9.101533 x 5.252457 x 3.031
20140331200850;Cube3610;pid(0);tid(1029);DebLvl(0x8);MH BBOX TRIMMED: 9.104455 x 5.124045 x 3.031
20140331200850;Cube3610;pid(0);tid(1029);DebLvl(0x8);**** MH BBOX FINAL: 9.104455 x 5.124045 x 3.
20140331200850;Cube3610;pid(0);tid(1029);DebLvl(0x8);RAW RESULT: 9.10 x 5.10 x 3.00 in
20140331200850;TrackManager;pid(2);tid(924);DebLvl(0x4);ERROR: did not match a box
  
```

- Check the length results of the individual heads. These are shown in BOUNDING BOX (0) (HEAD1) and BOUNDING BOX (1) (HEAD2). If the length of both heads is outside of tolerance, adjust the Tach Scale Factor in **Modify Settings | Tach/Trigger/Transmit** in small increments, and run test boxes until the length falls within system tolerances. If only one of the heads is out of tolerance, check the physical mounting of the dimensioners.

For example: If you notice that the length (in the direction of travel) of your package is too short and you have a tachometer pulse of 16 pulses per inch, enter a Tach Scale Factor of less than 1.0. If you enter 0.97 your effective pulses per inch become 15.52 pulses per inch. If, however, your package is too long, enter Tach Scale Factor greater than 1.0. Adjust by small increments.

- If the length of the individual heads is within system tolerance but the length of the MH BBOX FINAL is out of tolerance, adjust the X Shift in **Modify Settings | Dimensioning | Calibration** by small increments. Run test boxes and make adjustments until the length falls within system tolerance. If the length is too long, reduce the absolute value of the X Shift slightly. If the length is too short, increase the absolute value of the X Shift slightly.
 - If the width of the MH BBOX FINAL is out of tolerance, adjust the Y Shift for HEAD1 in the **Modify Settings | Dimensioning | Calibration** (DC3000 User Interface) by small increments. Run test boxes and make adjustments until the width falls within system tolerance.
5. After the calibration process has been completed, save parameters from each DM3610 and the DC3000 Dimensioning Controller to the laptop computer. This is done using **Modify Settings | Save/Retrieve** in DM3610 User Interface and DC3000 User Interface.



IMPORTANT: Be sure to turn **Certification Mode** back **On** in both the DC3000 Dimensioning Controller and the DM3610 dimensioning heads after calibration has been completed in Legal for Trade applications.

5.6 DIMENSIONING IRREGULAR-SHAPED PACKAGES

The DM3610 Two-Head Dimensioning System provides the dimensioning of irregular-shaped packages. When an irregular-shaped package (irregulars) passes through the dimensioning area, the system determines the smallest possible cuboidal dimensions of the package (length, width, and height) and creates a virtual bounding box around it. This is a very helpful in determining shipping or storage space needed for irregulars.

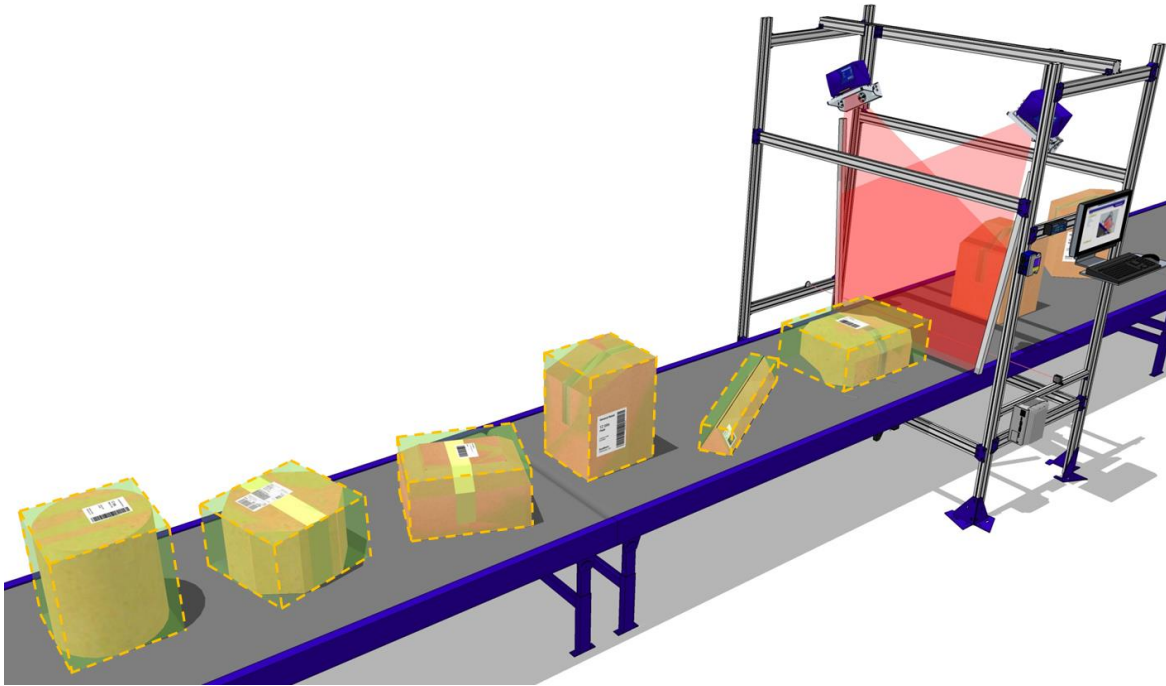


Figure 60: System determines smallest possible cuboidal dimensions

To check your system calibration for accuracy, you must determine the smallest cuboidal dimensions of an irregular-shaped test package, and then run the test package through the system to check the dimensioned results.

To determine the cuboidal dimensions of an irregular-shaped package:

1. Place the test package on a flat surface.
2. Establish a baseline edge using a straightedge.

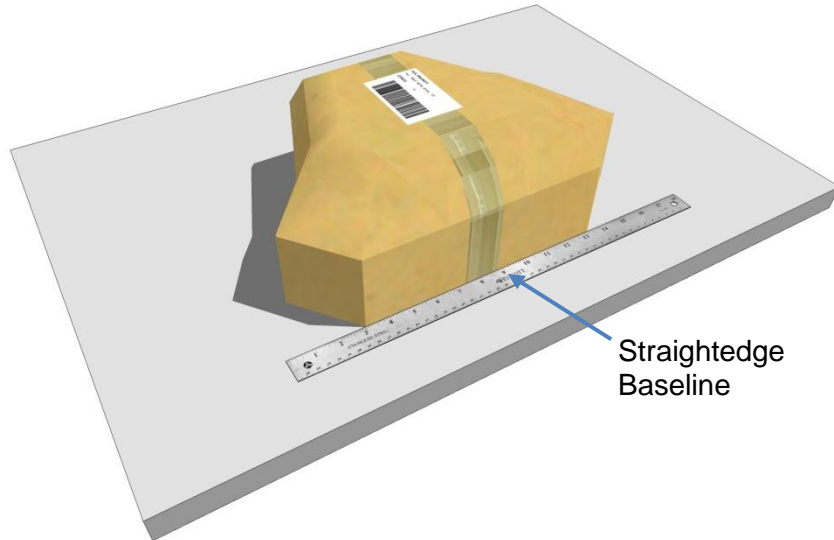


Figure 61: Establish a baseline against a straightedge

3. Place delimiters along the straightedge at the ends of the package. Two more straightedges can be used (preferable), or if necessary, accurate cuboidal boxes can be used. This determines the length (L) of the package.

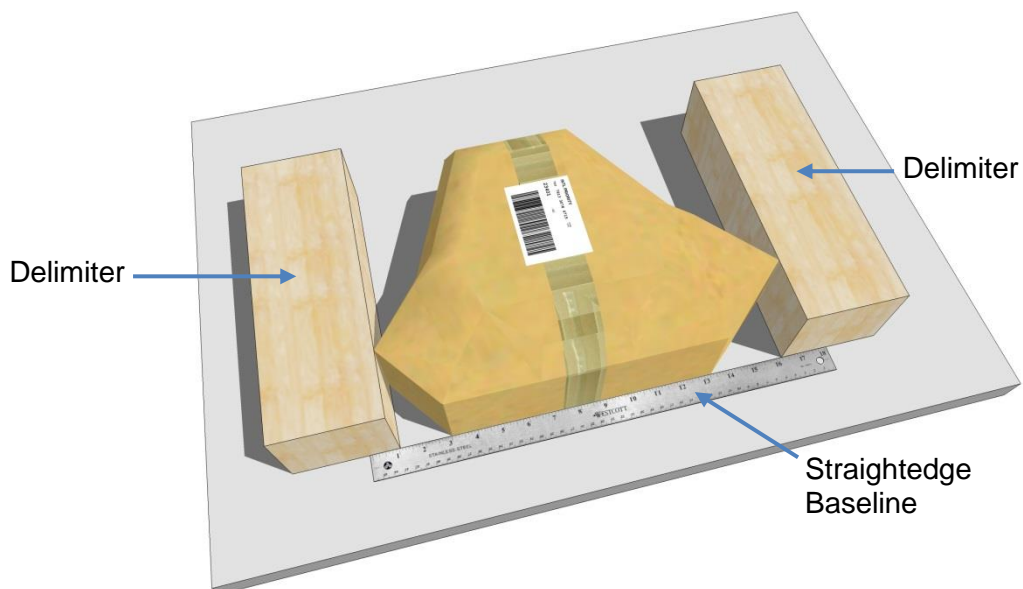


Figure 62: Place delimiters along the straightedge

4. With the delimiters in place along the baseline straightedge, measure between the edges of the delimiters and diagonally as shown to make sure they are parallel. The measurements must be equal. Then, when the delimiters are parallel, measure the distance between them to determine the length (L) of the package.

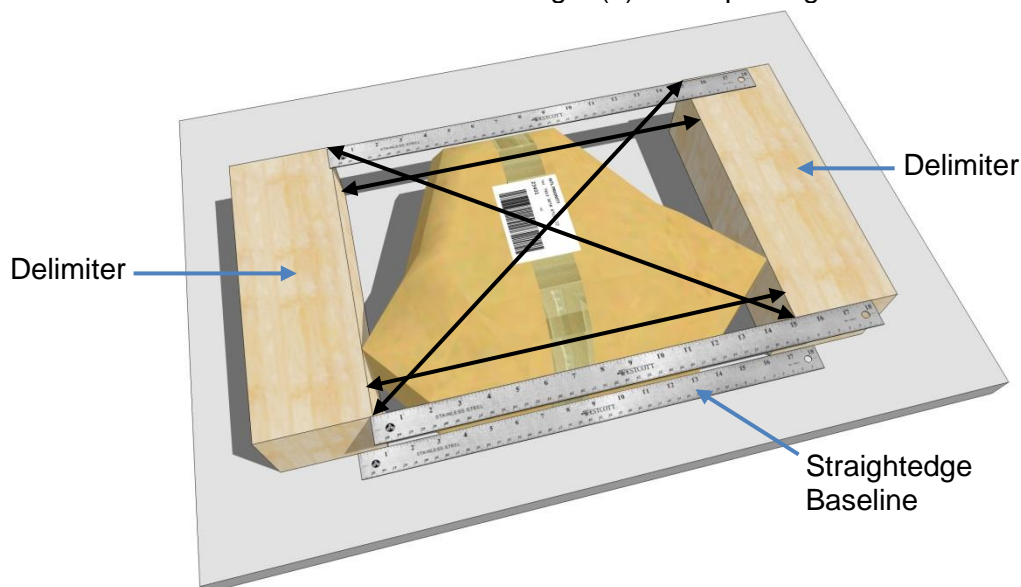


Figure 63: Measure to make sure the delimiters are parallel

5. Place a delimiter along the edge of the package opposite the baseline straightedge. Measure from the ends of the delimiter to the straightedge to make sure it is parallel. The measurements must be equal. Again, measure diagonals and the distance between the straightedge and delimiter. This determines the width (W) of the package.

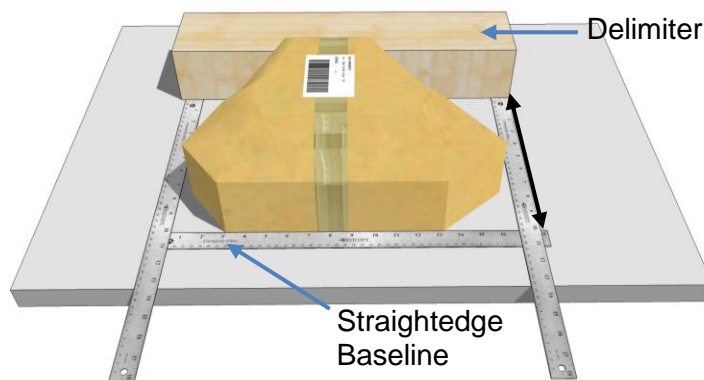


Figure 64: Measure to make sure the delimiter is parallel to the straightedge

- Next, use a level to determine the height (H) of the package. Rest one end of the level at the highest spot on top of the package, and then, when the bubble or digital readout indicates level, measure from the bottom of the level to the surface on which the package is resting.

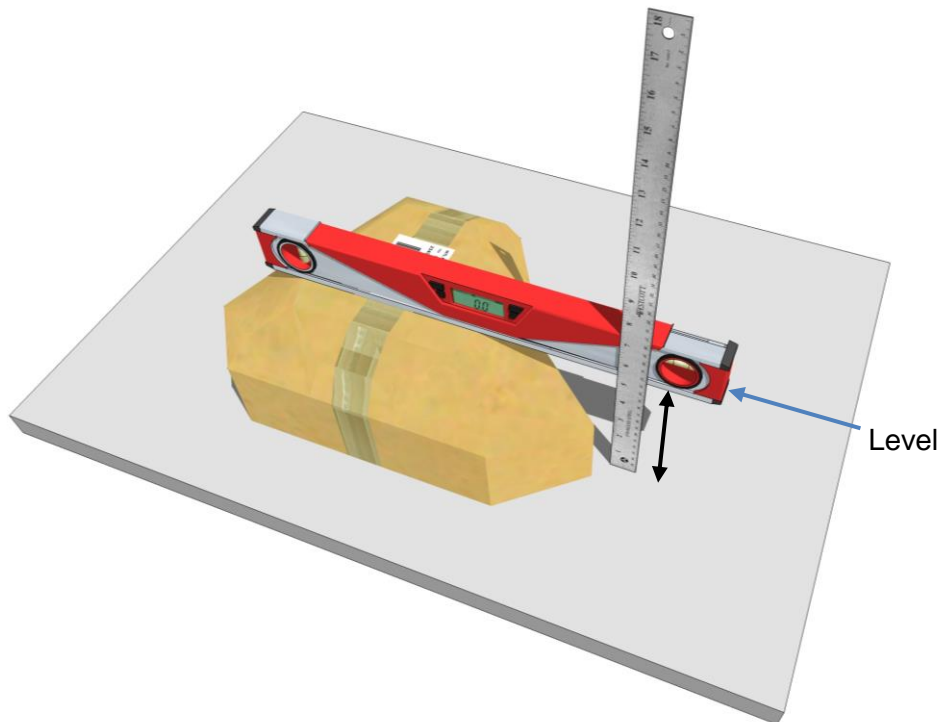


Figure 65: Measure the height using a level from the highest point on the package

- When you have determined the length, width, and height for the cuboid needed to contain the shape, run the irregular box through the system and check the dimensioning system results against your results. The dimensioning system results should be similar to those determined by directly measuring. See section 5.5.

You can also compare the volume ($L \times W \times H$) of your measured dimensions against the volume of the measurements returned by the dimensioning system. If your dimensions differ greatly from those returned by the dimensioning system, recalibrate the system (see sections 5.4 and 5.5) and compare the dimensions again.



NOTE: The cuboidal dimensions and volume may vary depending on what side of the package you use as the baseline against the straightedge. You may need to measure using different baseline edges to determine the smallest possible cuboidal dimensions.

The dimensioning system should always return results for the package's smallest possible cuboidal dimensions.

6 MAINTENANCE

6.1 OVERVIEW

This chapter provides instructions for maintaining optimum performance and life for your dimensioning system devices. It provides specific information on:

- Maintenance Procedures
- Exterior Cleaning
- Mounting Hardware Checks
- Wiring Connection Checks

Tools and Materials Required

Item	Description
Soft-bristle brush	For cleaning the DM3610's exterior
Clean, soft cloths	For cleaning the DM3610's exterior
Cleaning solutions	Mild detergent solution for cleaning the DM3610's exterior. 70% denatured alcohol, 30% de-ionized water solution for cleaning exit window
Soft cotton swabs or lint-free cloth	Use to clean DM3610 reader's exit window



IMPORTANT: Due to the complex and application-specific nature of dimensioning / certified dimensioning installations, the Multi-Head Dimensioning System must be setup and serviced by authorized technicians trained by Datalogic.

The maintenance procedures in this chapter may be performed by an end user technician. Training is recommended if the end user intends to do more than the maintenance procedures provided in this chapter.

There are no user serviceable parts within the DC3000 Dimensioning Controller or DM3610 Dimensioner. **DO NOT OPEN THE UNITS.** Opening the device may void its warranty.

CAUTION: Proceeding with any setup, calibration, or service procedures without proper training may void the warranty.

Training is available through specific Service Programs and Maintenance Agreements. See our website at www.datalogic.com.



CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

PROPERLY DISPOSE OF USED BATTERIES.

6.2 MAINTENANCE TASKS

Perform the maintenance tasks on an “as needed” basis to assure proper operation of the DC3000 Dimensioning Controller and DM3610 Dimensioner. Task schedule frequency depends upon the application environment conditions. It only requires a few minutes to complete each maintenance task.

6.2.1 Exterior Cleaning



WARNING: Shut down the DC3000 and DM3610 before performing this maintenance task. Do not stare into the DM3610 Dimensioner’s exit window at the laser light. Avoid direct eye exposure. The laser light level does not constitute a health hazard, however staring at the laser light for prolonged periods could result in eye damage.



CAUTION: Do not use any chemical on the DC3000 Dimensioning Controller or DM3610 Dimensioner that is unsafe for plastics, such as benzene, acetone, or similar products. Before performing this maintenance task, be sure to shut down the device.

The exterior cleaning procedure may be performed without removing the DC3000 Dimensioning Controller or DM3610 Dimensioner from the mounting structure.

1. Turn off the device by disconnecting the power source.
2. Clean the exterior (except the exit window) with a clean, soft-bristle brush. Be sure not to brush any dust, dirt, or debris onto the exit window. Make sure the cooling fins of the DC3000 Dimensioning Controller are free of dust and debris.
3. Carefully remove any debris in or around the exit window of the DM3610 Dimensioner.
4. Wipe the exterior of the DM3610 Dimensioner (except the exit window) with a clean, soft cloth dampened slightly with a mild detergent solution.
5. The of the DM3610 Dimensioner exit window should be cleaned after this task is completed.

6.2.2 Cleaning the of the DM3610 Dimensioners' Exit Windows



WARNING: Shut down the DM3610 before performing this maintenance task. Do not stare into the DM3610's exit window at the laser light. Avoid direct eye exposure. The laser light level does not constitute a health hazard, however staring at the laser light for prolonged periods could result in eye damage.



CAUTION: Never apply cleaning solution directly to the exit window. Always apply the solution to a cloth, and then the cloth to the window. Do not use any chemical on the DM3610 that is unsafe for plastics, such as benzene, acetone, or similar products.

The exit window cleaning procedure may be performed without removing the reader from the mounting structure if it is possible to do so.

1. Turn off the DM3610 by disconnecting the power source.
2. Follow the exterior cleaning procedure before cleaning the exit window
3. Check the exit window surface for any dust, dirt, or smudges. If the window needs to be cleaned, proceed to Step 4.
4. Make a solution of seven parts denatured alcohol and three parts water.
5. Apply the cleaning solution to a cotton swab or lint-free cloth.
6. Apply the cleaning solution to the exit window.
7. Remove any streaks or remaining moisture from the exit window with a dry, soft, lint-free cloth or lens paper.
8. Verify DM3610 operation.

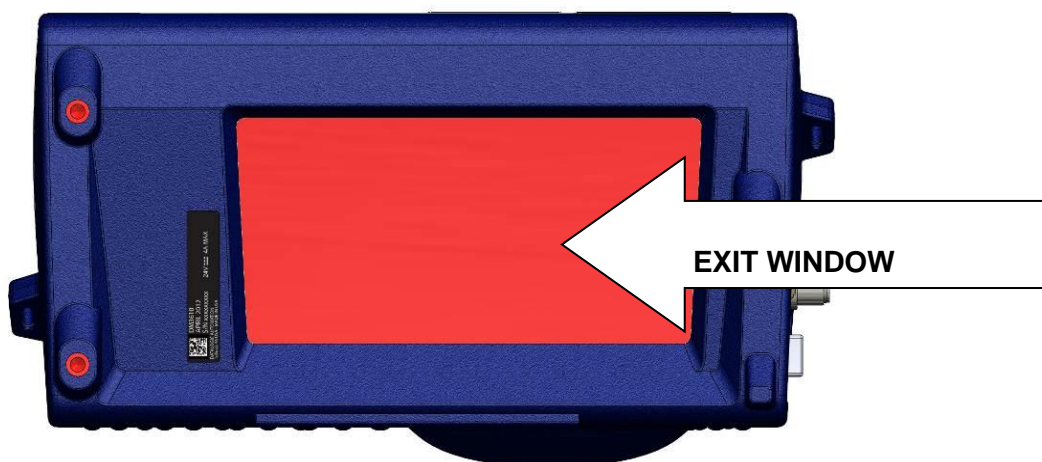


Figure 66: DM3610 Exit Window Location

6.2.3 Cleaning the Photoelectric Sensor

If your application uses the photoelectric sensor option as a hardware trigger, be sure to clean the photoelectric sensor periodically as outlined below.

1. Turn off the product transport.
2. Turn off the DM3610 by disconnecting the power source.
3. Clean the photoelectric sensor's lens using the denatured alcohol solution and a cotton swab or lens paper.
4. Clean the reflector using the denatured alcohol solution and a cotton swab or lens paper.
5. Verify photoelectric sensor operation.

6.2.4 Cleaning the Tachometer

If your application uses the tachometer option for tracking purposes, be sure to clean the tachometer wheels periodically as outlined below.

1. Turn off the product transport.
2. Turn off the DM3610 by disconnecting the power source.
3. Using a clean, soft cloth, wipe the wheels of the tachometer clean using a mild detergent solution.
4. Before restarting the system, be sure the tachometer is making good contact with the product transport.
5. Verify tachometer operation.

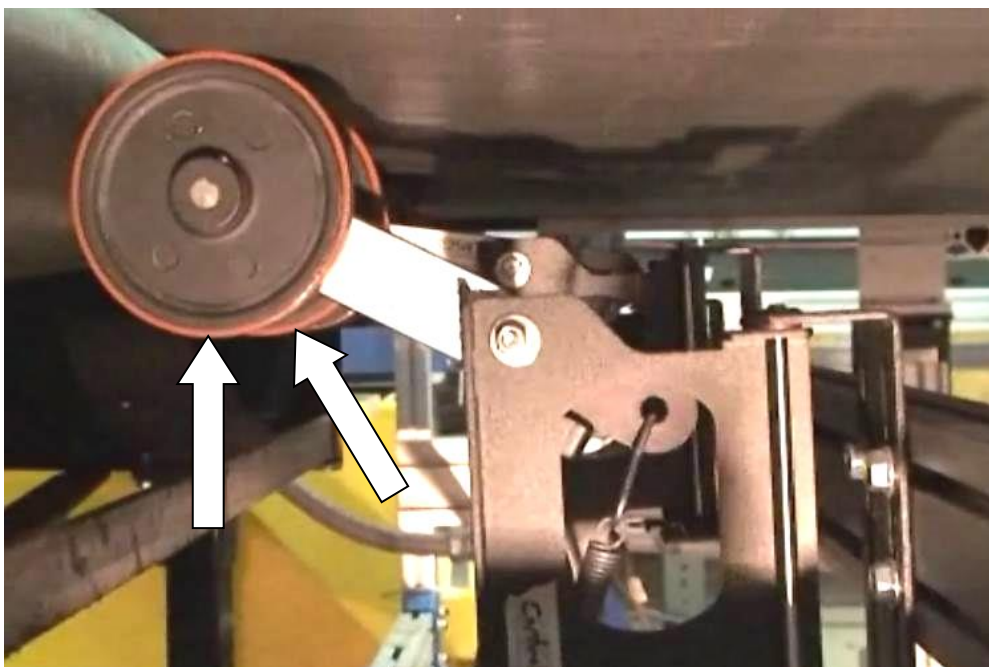


Figure 67: Tachometer Wheel

6.2.5 Tighten Mounting Hardware

1. Check all DM3610 Dimensioner, CBX100 connection box, and power supply mounting hardware. Tighten as necessary. Do not over-tighten. Be sure not to disturb the equipment's alignment as it relates to the product transport.
2. Check the mounting hardware of the Photoelectric Sensor (if this option is being used). Tighten as necessary. Do not over-tighten.
3. Check the mounting hardware of the tachometer (if this option is being used). Tighten as necessary. Do not over-tighten.

6.2.6 Checking Dimensioning System Connections

Wiring connections to the DM3610 are made to the connector panel and CBX100. (See chapter 3, *Electrical Installation*.)

1. Check all wiring connections to the connector panel. Tighten any loose connections as necessary. Do not over-tighten.
2. Check all wiring connections to the CBX100. Tighten any loose connections as necessary. Do not over-tighten.
3. Check all cabling/conduit for signs of wear/damage. Repair/replace any damaged cable connections as necessary.

6.2.7 Verify System Operation

If after performing maintenance, the dimensioning system continues to perform below the normal operations experienced with the system under normal daily conditions, contact Datalogic through the **Technical Support** page on our website at www.datalogic.com.

6.2.8 Verify Photoelectric Sensor Operation

1. Block the Photoelectric Sensor emitter beam to confirm it is aligned properly with the reflector.
2. Verify that the TRIGGER LED on DM3610 is green when photoelectric sensor beam is blocked.
3. If the photoelectric sensor's LED does not change status, adjust the photoelectric sensor so that it is properly aligned with the reflector.
4. If the TRIGGER LED on the DM3610 is not green when the photoelectric sensor's beam is blocked, check the cabling between the photoelectric sensor and CBX100 for damage.

6.2.9 Verify Tachometer Operation

1. Rotate the tachometer wheel.
2. The TACH LED on the DM3610's connector panel should flash indicating the tachometer is operational.
3. If the TACH LED does not flash when the tachometer wheel is rotated, check the cabling between the tachometer and the CBX100 for damage.

7 TROUBLESHOOTING



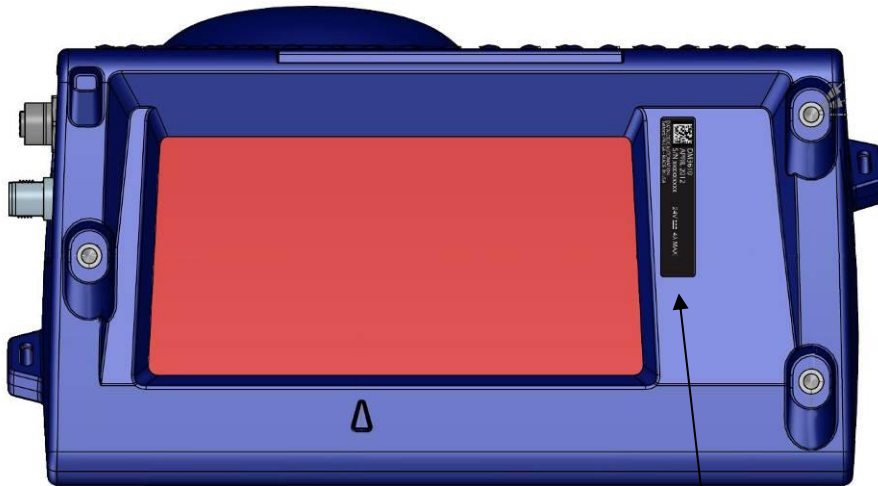
IMPORTANT: Due to the complex and application-specific nature of dimensioning / certified dimensioning installations, operational deficiencies of the DM3610 must be diagnosed and serviced by a trained and authorized Datalogic technician.

There are no user serviceable components or field replaceable units (FRUs) inside the DM3610.

Training is available through specific Service Programs and Maintenance Agreements. See our website at www.datalogic.com.



NOTE: When contacting Datalogic Technical Support for help with a DM3610 Dimensioner, please be ready to share the unit serial number with the Datalogic technician. The unit's serial number tag is located on the bottom of the device, as shown below. Technical Support for Industrial Automation Products is available at www.datalogic.com.



Serial Number Tag Location

Figure 68: Serial Tag Location

7.1 DC3000 DIMENSIONING CONTROLLER ERROR CODES AND RESOLUTIONS



NOTE: The following error codes pertain to a DC3000 Dimensioning Controller using certified dimensioning. If the DC3000 is providing volume information only, some of these codes do not apply.

For DM3610 HEAD errors, see the *DM3610 Dimensioner Reference Manual*.

```

BOX_NODIM_UNKNOWN,           // Set if unknown error caused the NoDim
BOX_TOL_FAIL_LENGTH,        // Set if box tolerance check failed - length
BOX_TOL_FAIL_WIDTH,         // Set if box tolerance check failed - width
BOX_TOL_FAIL_HEIGHT,        // Set if box tolerance check failed - height
BOX_WRITE_ALIBI_FAIL,        // Set if attempt to write box results to Alibi
                              // store failed
BOX_STACKED,                 // Set if box is stacked with another box
BOX_LOW_FILL_RATE,           // Set if the bounding box fill rate is below our
                              // threshold
BOX_TILTED_TOP,              // Set if the bounding box top is tilted
BOX_LOWNEARTILTEDTOP,        // Set if low box near tilted top box (possibly
                              // shingled)
BOX_BADBAGZ,                 // Set if ratio of good points used to calc bagZ
                              // and points in the initial histo peak is < some
                              // threshold
BOX_BADBELTPTS,              // Set if there are significant belt points
                              // underneath the top surface ("3D" bbox workaround)
MAX_NODIM_REASONS

```

8 TECHNICAL FEATURES

8.1 TECHNICAL SPECIFICATIONS

DC3000 Dimensioning Controller

ELECTRICAL FEATURES	
Power Requirements	Minimum power input: DC 9 V ~ 34 V 9.0 A ~ 2.4 A
Communication Interfaces	Ethernet 2 x RJ45 (TCP/IP), 2 x RS232, 1 x RS232/422/485
Inputs	6 x USB 2.0 compliant Ports
Video	VGA + DVI-D (Extended by DVI-I Y-cable), VGA + HDMI, DVI + HDMI
USER INTERFACE	
Programming	On board HTML web server interface
ENVIRONMENTAL FEATURES	
Temperature	Operating: 0° to 50° C [32° to 122° F] Storage: -40° to +85° C [-40° to +185° F]
Relative Humidity	95% @ 40° C (non-condensing)
PHYSICAL FEATURES	
Overall Dimensions	L 267 mm [10.5"] x W 174 mm [7.0"] x H 124 mm [5.0"]
Weight	4.0 kg [8.8lb]
Enclosure	

DM3610 Dimensioner

ELECTRICAL FEATURES	
Power Requirements	24VDC +/- 10%
Power Consumption	19 W Average (75 W Max) based on 600 scans/second
Communication Interfaces	Ethernet (TCP/IP), RS232/ RS422 (RS485 for custom only)
Inputs	(1) Tachometer, (1) Trigger, (2) SW programmable general purpose
OPTICAL FEATURES	
Wavelength	Visible laser diode (red) 658 nm typical
Safety Class	Class 3R – IEC60825-1; Class II - CDHR
DIMENSIONING FEATURES	
Dimensioning Accuracy	
• NTEP/	± 0.20" for length and width and ± 0.10" for height
• OIML	± 5.0 mm for length, width and height
Conveyor Speeds	Up to 3.1 m/s [620 fpm]

Box Size (maximum)	L 2500 mm [98"] x W 1200 mm [48"] x H 900 mm [36"]
Box Size (minimum)	
• NTEP	L 2.4" x W 2.4" x H 1.2"
• OIML	L 50 mm x W 50 mm x H 50 mm
USER INTERFACE	
Status Indicators	LEDs - STATUS, TRIGGER, TACH, READ, RX/TX, NETWORK, DIMENSION STATUS INDICATORS
Keypad	3 keys
Programming	On board HTML web server interface
ENVIRONMENTAL FEATURES	
Temperature	Operating: 0° to 50° C [32° to 122° F] Storage: -20° to +70° C [-4° to +158° F]
Relative Humidity	10-90% non-condensing
PHYSICAL FEATURES	
Overall Dimensions	L 279 mm [11.0"] x W 152 mm [6.0"] x H 175 mm [6.9"]
Mounting Dimensions	L 340 mm [13.39"] x W 182 mm [7.15"] x H 281 mm [11.07"]
Weight	5.5 kg [12 lbs.]
Enclosure	IP 65, Aluminum
OPTIONS AND WARRANTY	
Options	Side-by-side package detection, irregulars, out-of-gauge detection
Service Options	Installation services and on-site training
Warranty	2-year limited, parts and labor

The latest product documentation can be downloaded from our website, www.datalogic.com.

INDEX

- 4**
- 40-Character Display, 7
- A**
- Adjusting
 - Angle Offset, 111
 - Field of View, 111
 - Tilt and Skew, 108
- Adjusting Dimensioner Skew, 110
- Adjusting Dimensioner Tilt, 108
- Aligning Lasers, 111
- Application, Knowing Your, 11
- Audit and Alibi
 - Diagnostics, 102
- B**
- Backup
 - Save/Retrieve, 90
- Browser-Based Interface, 51
- C**
- Cable Connections, 35
- Calibration, 35
 - Dynamic, 124
- Calibration Boxes, 8
- Calibration Kit, 8
- Caution
 - ESD, v
 - High Voltage, v
 - Laser, v
- Cautions, v
- CBX Connection Box
 - Configuration, Initial, 41
 - Initial Configuration, 41
 - Photoelectric Sensor, Connecting, 42
 - Serial Communication Wiring, 49
 - Setup, 41
 - Tachometer Wiring, 44, 46
 - Wiring, 41
- CBX Industrial Connection Box, 6
- CBX510, 6
- CD141, 7
- CE Compliance, vii
- Checking Installation, 50
- Cleaning
 - Exit Window, 132
 - Exterior, 131
 - Photoelectric Sensor, 133
 - Tachometer, 134
- Compliance, v
- Configuring the System, 114
- Connections
 - Checking, 135
 - Power, 40
- Controller, 2
- Controller Configuration, 56
- Conventions, v
 - ESD Caution, v
 - High Voltage Cautions, v
 - Laser Caution, v
 - Notes, v
 - Warnings or Cautions, v
- D**
- DC3000, 2
 - Configuring the System, 114
- Diagnostics, 95
 - Audit and Alibi, 102
 - DimView, 99
 - Help, 106
 - Log Viewer, 101
 - Monitor, 96
 - Software Install, 104
- Dimension, Weigh, Scan System, 5
- Dimensioner, 3
 - Adjusting Skew, 110
 - Adjusting Tilt, 108
 - Calibration, 35
 - Checking Connections, 135
 - Connecting to PC, 41
 - Electrical Connection, 38
 - Electrical Installation, 37
 - Mounting, 16, 22
 - Pre-Configuring, 25
 - Setup, 35
 - Skew, 110
 - Tilt, 108
 - Wiring, 38
- Dimensioning, 60
 - Calibration, 63, 107
 - Settings, 60
- Dimensioning Setup and Calibration, 107
- Dimensions, 12
- Dimensions, Clearance, 12
- DimView
 - Diagnostics, 99
 - Understanding, 100
- DM3610, 3
 - Pre-Configuring, 25
- DWS System, 5
- Dynamic Calibration, 124
- E**
- Electrical
 - disconnect device, readily accessible, 40
 - high-voltage precautions, 40
 - Installation, 37
 - installation sequence recommended, 38, 137, 138

- safety ground, 40
- Electrical Installation, 37
 - Connecting Dimensioner, 38
 - Guidelines, 39
 - power quick-disconnect requirement, 39
 - Precautions, 39
 - Preparation, 37
 - safety ground, 39
 - Sequence, 38

Electrical Safety, v

ESD

- ESD caution, 37

Ethernet Cable Connection, 35

Exit Window Cleaning, 132

G

Gateway IP Address

- Definition, 73

Getting Started, 51

H

Help

- Online, 54, 106

I

I/O Cable Connection, 35

Inscription, 93

- OIML, 93

Install

- Software, 104

Installation, 10

- Checking, 50

- sequence recommended, 38, 137, 138

Installation, Typical, 17

Installing

- CBX510, 31

- CD141, 34

- Connection Box, 31

- Controller, 31

- DC3000 Dimensioning Controller, 31

- Dimensioner, 30

- Display, 34

Installing the DM3610 Dimensioners, 30

Introduction, 1

IP Address

- Default, 52

- Definition, 73

- PC, Changing, 52

L

Laser

- Angle Offset, 111

- Field of View, 111

Laser Safety, v

Lasers, Aligning, 111

Log Viewer, 101

Logging Options, 89

M

Maintenance, 130

- Checking Connections, 135

- Cleaning Exterior, 131

- Exit Window Cleaning, 132

- Photoelectric Sensor Cleaning, 133

- Tachometer Cleaning, 134

- Tasks, 131

- Tightening Mounting Hardware, 135

- Verifying Operation, 135

- Verifying Photoelectric Sensor Operation, 135

- Verifying Tachometer Operation, 136

Mechanical Installation, 9, 12

- Dimensions and Clearance, 12

Modify Settings, 55

Monitor

- Diagnostics, 96

Mounting

- Dimensioner with UMB, 16

- Photoelectric Sensor, 32

- Power Supply, 34

- Tachometer, 33

- UMB, 22

Mounting Guidelines

- Connecting the Cables to the Dimensioner, 35

- Conveyor Considerations, 13

- Mounting Structure Assembly, 20

- Mounting Structure Considerations, 14

- Photoelectric Sensor, 32

- Power Supply, 34

- Tachometer, 33

- Universal Mounting Bracket, 22

- Universal Mounting Bracket (UMB), 16

Mounting Guidelines, General, 13

Mounting Hardware

- Tightening, 135

Mounting Structure, 14, 20

N

Net Mask

- Definition, 73

Network

- Message Definition, 78

Network Settings, 74

Notes, v

Notifying Body, 93

O

OIML

- Inscription, 93

Online Help, 54, 106

Operation

- Verifying, 135

P

- Patents, iv
- PC
 - Connecting to Host Port, 41
 - Connecting to Master Dimensioner, 41
- Photoelectric Sensor, 5
 - Connecting to CBX Connection Box, 42
 - Mounting, 32
 - PNP Output, Wiring, 43
 - Verifying Operation, 135
- Photoelectric Sensor Cleaning, 133
- Physical Support Requirements, 12
- Power Cable Connection, 35
- Power Connections, 40
- Power supply
 - disconnect device, readily accessible, 40
 - requirements, 40
- Power Supply, vii
 - Mounting, 34
- Pre-Configuring the DM3610 Dimensioner, 25
- Preparing for Electrical Installation, 37
- Preparing for Mechanical Installation, 9

R

- Reference, iv
- Reference Documentation, iv
- Remote Display, 7

S

- Save/Retrieve, 90
 - View Local Parameters, 90
- Sequence of Installation, 10
- Serial
 - Message Definition, 85
- Serial Communication, 83
 - Port, 83
 - Wiring, 49
- Setup
 - Dimensioner, 35
 - System, 107
- Skew
 - Adjusting, 110
- Slave Dimensioner
 - NPN Output Wiring Via CBX, 47
 - PNP Output Wiring Via CBX, 48
- Slave Dimensioner Wiring Via CBX, 47
- Software Install, 104
- Software Interface, 51
- Specifications, 139
- Standard Regulations, v
- Supporting the Dimensioners, 12
- System Configuration, 58
- System Overview, 1
- System Setup, 107

T

- Tach, 5
- Tachometer, 5, 69
 - Cleaning, 134
 - Mounting, 33
 - NPN Output, Wiring, 44, 46
 - PNP Output, Wiring, 45
 - Verifying Operation, 136
 - Wiring, 44, 46
- Technical Features, 139
- Technical Specifications, 139
- Tightening Mounting Hardware, 135
- Tilt
 - Adjusting, 108
- Trigger, 69
 - LED status indicator, 42
- Troubleshooting, 137

U

- UL Listing, vii
- UMB, 16
 - Mounting, 22
- Unit Dimensions, 12
- Universal Mounting Bracket
 - Mounting, 16, 22
- User Interface, 51
 - Basics, 54
 - Controller Configuration, 56
 - Dimensioning
 - Calibration, 63
 - Settings, 60
 - Dimmensioning, 60
 - Log Out, 53
 - Logging Options, 89
 - Menu Tree, Using, 54
 - Modify Settings, 55
 - Network, 73
 - Online Help, 54
 - Prerequisites, 51
 - System Configuration, 58
 - Tach/Trigger/Transmit, 69
 - Tachometer, 69
 - Transmit, 69
 - Trigger, 69

V

- Vibration Limitations, 12

W

- Warning Labels, vi
- Warnings, v
- Warranty, 37
- Website, iv
- Wiring, 37
 - CBX Connection Box, 41
 - Dimensioner, 38

Guidelines, 39
Photoelectric Sensor, 42
power quick-disconnect requirement, 39
Precautions, 39
safety ground, 39, 40

Sequence, 38
Serial Communication, 49
Slave Dimensioner, 47, 48
Tachometer, 44



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