DiNi

DIGITAL LEVEL

QUICK REFERENCE GUIDE

Version 2.0
Revision B
February 2018
P/N 57344002

NORTH AMERICA

Trimble Inc.
10368 Westmoor Drive
Westminster CO 80021
USA
www.trimble.com

EUROPE

Trimble Germany GmbH
Am Prime Parc 11
65479 Raunheim
GERMANY
+49-6142-2100-0 Phone
+49-6142-2100-140 Fax
www.trimble.com

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Release Notice

This is the February 2018 release of the DiNi Digital Level Quick Reference Guide, part number 57344002, version 2.0

Product Warranty Information

For applicable product warranty information, please refer to the Warranty Card included with this Trimble product, or consult your Trimble dealer.

Notices

Europe

This product has been tested and found to comply with relevant requirements pursuant to European Council directives, thereby satisfying the requirements for CE marking and sale within the European Economic Area (EEA).

Applicable directives:

- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU

Australia and New Zealand

This product conforms with the regulatory requirements of the Australian Communications and Media Authority (ACMA) EMC framework, thus satisfying the requirements for RCM-Marking and sale within Australia and New Zealand.

Taiwan – Battery Recycling Requirements

The product contains a removable Lithium-ion battery. Taiwanese regulations require that waste batteries are recycled.

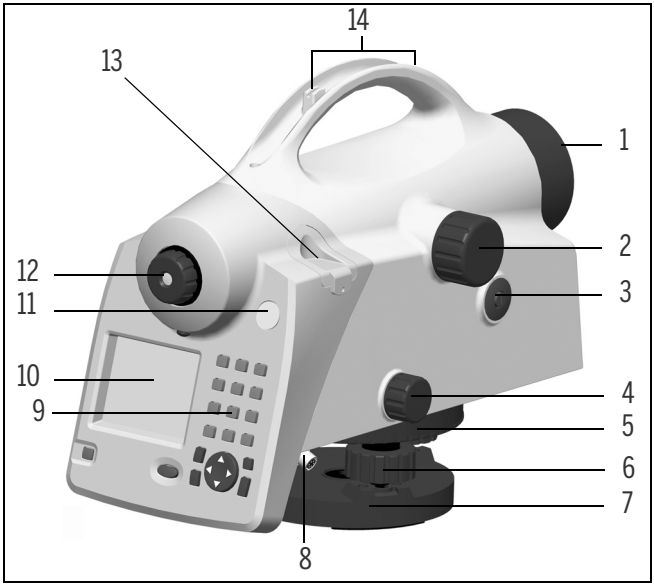
Notice to Our European Union Customers

For product recycling instructions and more information, please go to: www.trimble.com/Corporate/Environmental_Compliance.aspx.

Recycling in Europe: To recycle Trimble WEEE (Waste Electrical and Electronic Equipment, products that run on electrical power.), Call +31 497 53 24 30, and ask for the "WEEE Associate". Or, mail a request for recycling instructions to:
Trimble Europe BV
c/o Menlo Worldwide Logistics
Meerheide 45
5521 DZ Eersel, NL

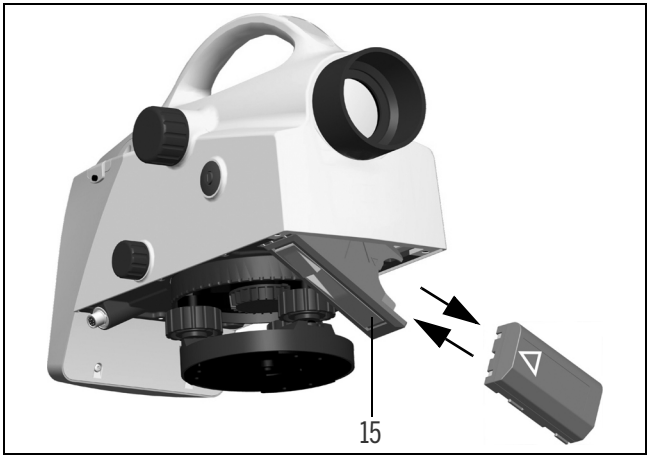
Contents

Hardware overview



#	Description	#	Description
1	Telescope objective with integrated sun-shield	2	Telescope focusing knob
3	Trigger key	4	Horizontal tangent screw (endless slow motion drive)
5	Graduated circle	6	Footscrews

#	Description	#	Description
7	Tribrach	8	Power/Communication connector
9	Keyboard	10	Display
11	Window for circular bubble	12	Reticle
13	Cap, to be removed for adjustment of circular bubble	14	Sight vane (notch and bead sight)



#	Description	#	Description
15	Battery compartment		

Software overview

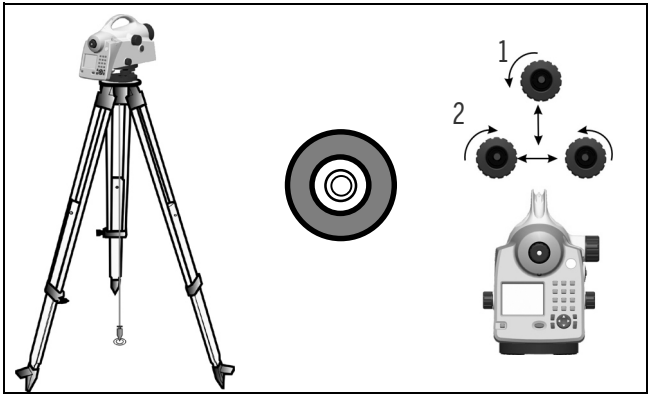
Main Menu	Sub Menu	Sub Menu	Description
1 Files	Project Menu	Select Project	Select from a list of stored projects
		New Project	Start a new project
		Rename Project	Change the name of a stored project
		Delete Project	Delete a stored project
		Copy Between Projects	Copy information between two projects
	Editor		Edit stored data, enter and view data and enter and change code lists
	Data Im/ Export	DiNi to USB	Transfer data from the DiNi to a USB memory device
		USB to DiNi	Transfer data from a USB memory device to the DiNi
	Memory		Internal memory. Total memory space, free memory space and format internal memory

Main Menu	Sub Menu	Sub Menu	Description
2 Configuration	Input		Input of Refraction coeff., Addition const. (R), Date and Time
	Limits/Tests		Input of Max. sighting dist., Min sighting height, Max. sighting height, Diff. and Max diff.
	Adjustment	Förstner Method	Line of sight adjustment.
		Nähbauer Method	Line of sight adjustment.
		Kukkamäki Method	Line of sight adjustment.
		Japanese Method	Line of sight adjustment.
	Instrument Settings		Setting of Height unit, Input unit, Display (R), Shut off, Sound, Language, Date and Time syst.
	Settings of recordings		Setting of Remote control, Recording, Recording data (RMC or R-M), PNo increment and Time

Main Menu	Sub Menu	Sub Menu	Description
3 Survey	Single Point Measurement		Single Point Measurement
	Line leveling		Line leveling
	Intermediate Sights		Benchmark input
	Stake out		Stake out
	Continuous measurements		Continuous measurements
4 Calculation	Line Adjustment		Line Adjustment

Setup

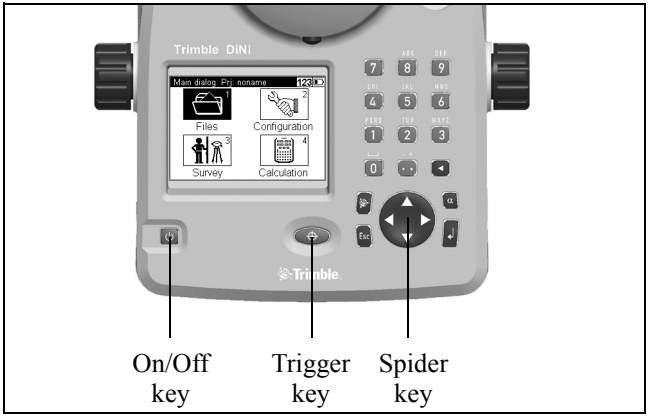
1. Set up the tripod securely.
2. Remove the instrument from container.
3. Place the instrument on the tripod and screw down tightly (tripod retaining screw).
4. Move the bubble into the center of the circular level (tripod foot screws).



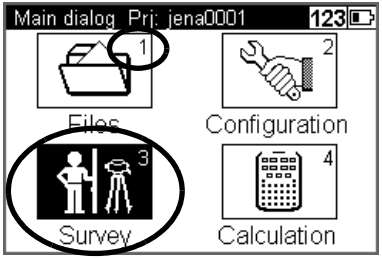
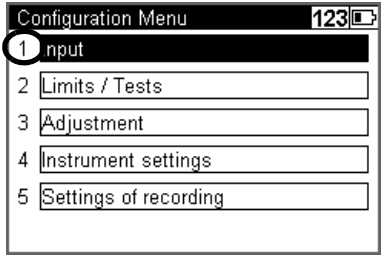
Switching the Instrument On and Off

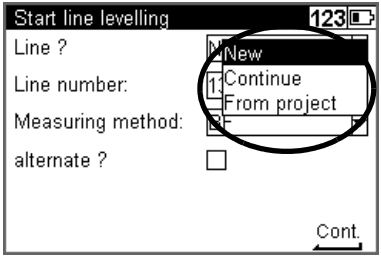
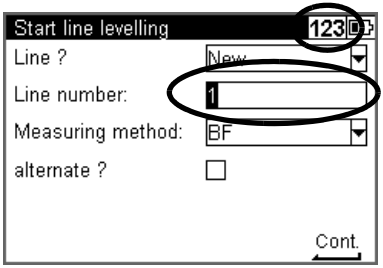
To switch the instrument on or off press the on/off key.

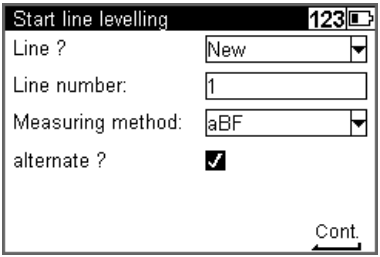
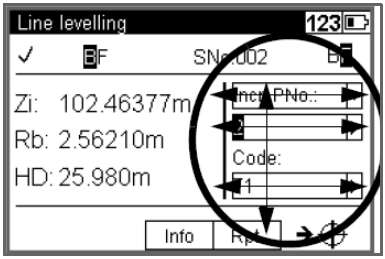
The Control Panel

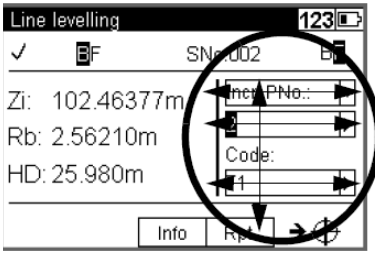


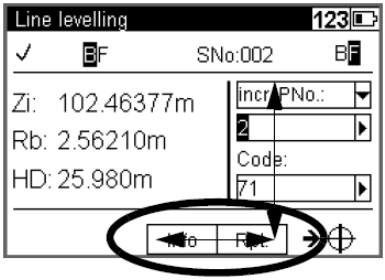
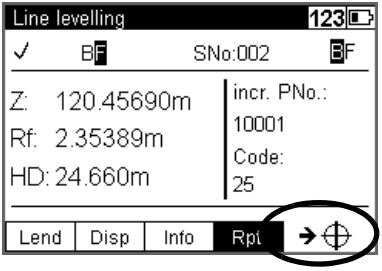
Keyboard and Display Functions

Display	Key function and description
	Navigate with the spider key in the display menus to highlight the item you want to select. To confirm a selection press the enter key or go directly by pressing the number of the selection e.g. 1 number 1 key
	

Display	Key function and description
	Some input fields are marked with a drop down-arrow to indicate that input selections are made from a pre-defined list. Press the right arrow on the spider key to select from a drop-down list. Press the left arrow on the spider key to step through the possible selections
	Some input fields are open for alpha and numeric inputs from the user. Type in the input of your choice with the instrument keyboard. Switch between numeric, capital letters or lowercase letters by pressing the alpha key. The status is indicated at the top of the display.

Display	Key function and description
	Some inputs are made with a check box. Navigate with the ✥ spider key in the display to highlight the check box. Press the left arrow on the ✥ spider key to select or unselect.
	Navigate with the ✥ spider key up, down, left or right.

Display	Key function and description
	In this part of the display you can navigate with the ✥ spider key up or down through the different input fields and down to the softkeys at the bottom of the display. When an input field is highlighted you can press the right arrow on the ✥ spider key to select from a drop-down list or press the left arrow on the ✥ spider key to step through the possible selections.

Display	Key function and description
	In this part of the display you can navigate with the spider key left or right to highlight different soft keys. Press Enter to select the highlighted soft key function. To be able to go back up to the input fields you must first highlight the Soft key located directly under the input fields, press up or down on the spider key.
	The symbols displayed in the bottom corner of the display indicates the next step.

Ready to measure press / measurement key

Select

Press enter key to select a detail

Store

Press enter key to store measurement

Accept

Press enter key to accept

Cont.

Press enter key to continue

Copy

Press enter key to copy data

Page 2

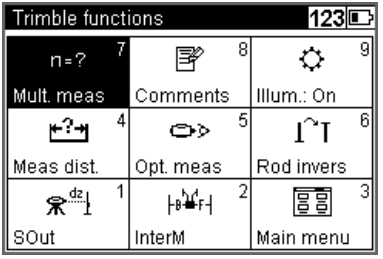
Press enter key to continue to next screen

Press spider key up or down arrow to show further lines

Trimble Functions

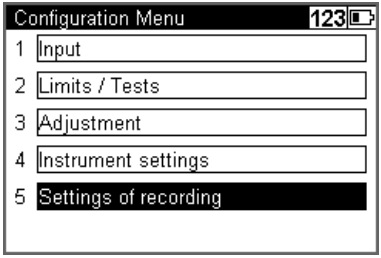
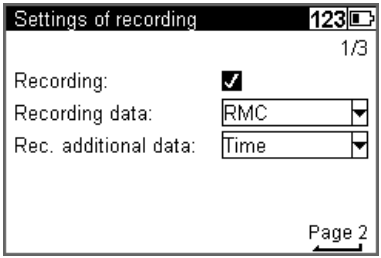
The Trimble Functions menu can be reached at all stages by pressing the Trimble icon key The following functions are available.

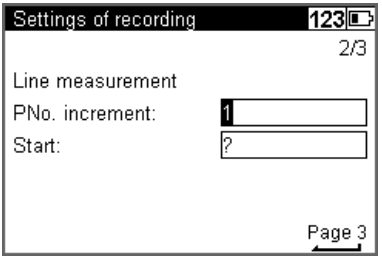
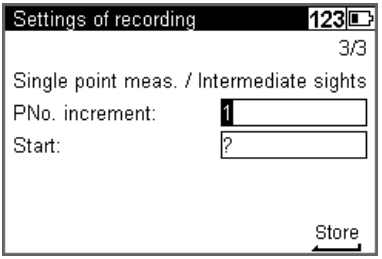
NOTE – All functions are not available at all times, the available functions in the Functions Menu are related to the selected program.

Actions	Screen
Press the Trimble icon key. Select the Trimble function of your choice.	

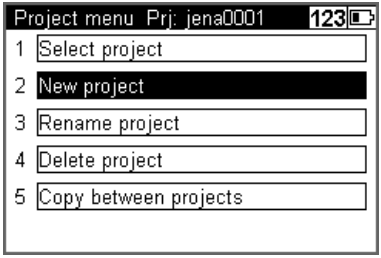
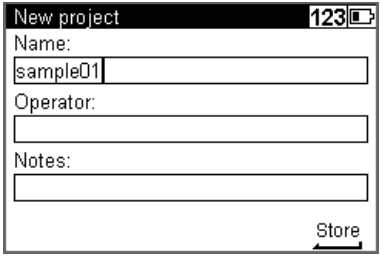
1. Stake out points (During Line Leveling only)
2. Intermediate sights (During Line Leveling only)
3. Main menu
4. Measure distance
5. Optical measurement
6. Inverted staff measurement
7. Multiple measurement
8. Input comments
9. Illumination

Setting Recording

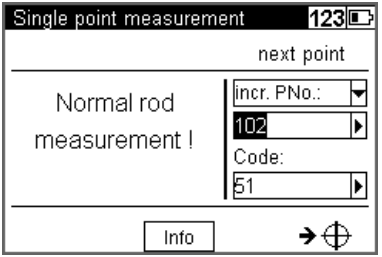
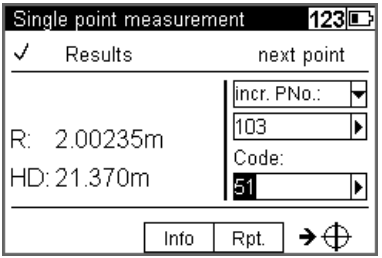
Actions	Screen
Select **Settings of Recording** from the Configuration menu.	
Select or clear the **Recording** check box to turn on or off the recording. Select **Recording Data.** R-M=Only the measured values are saved RMC=The measured and calculated values are saved. Select **Rec. additional data. Press** ↵ enter to continue to **Page 2**.	

Actions	Screen
Number system Line measurement: Enter PNo. Increment and Start number. Press ↵ enter to confirm and continue.	
Number system Single point measurement / Intermediated sights: Enter PNo. Increment and Start number. Press ↵ enter to confirm and continue.	

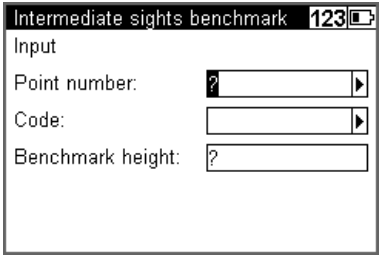
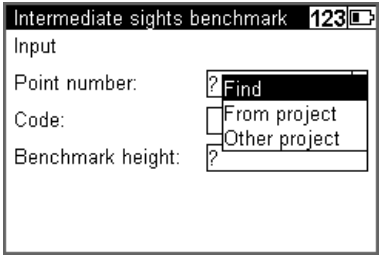
Creating a Project

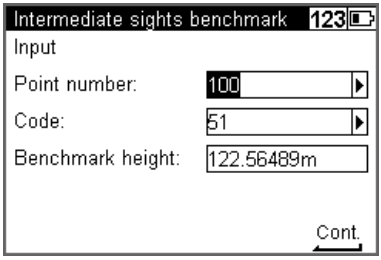
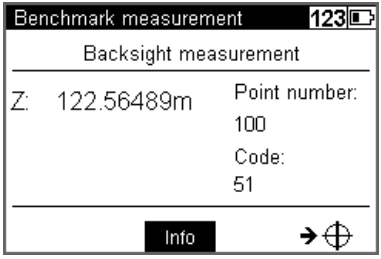
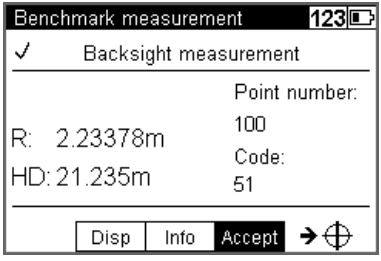
Actions	Screen
Select **New project (2)** from the Project menu.	
Key in the project **Name** of your choice. You can also key in the **Operator** name and **Notes**. Press ↵ enter key to **Store** the project.	

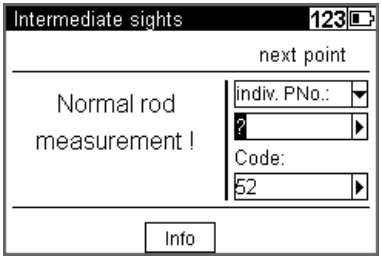
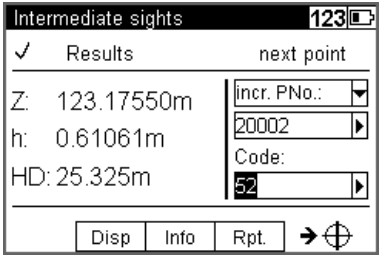
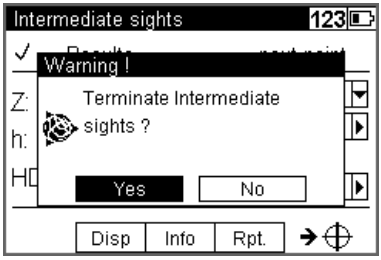
Single Point Measurement

Actions	Screen
Select **Survey** and 1 **Single Point measurement** Enter Point number and Point code. Press the ⊕ / ◯ trigger key to start the measurement.	
Start measurement to next point.	

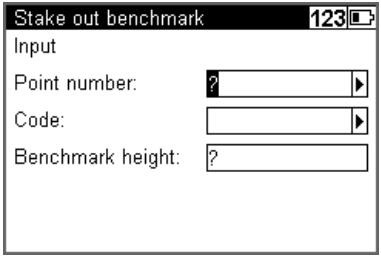
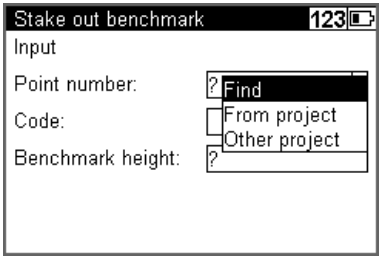
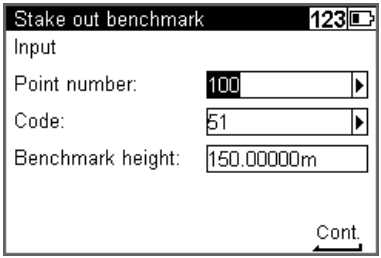
Intermediate Sights

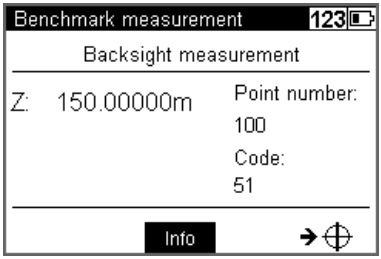
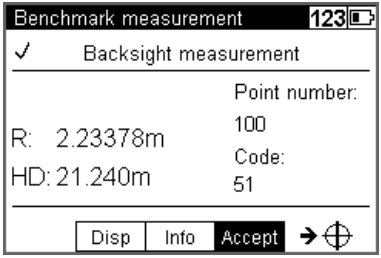
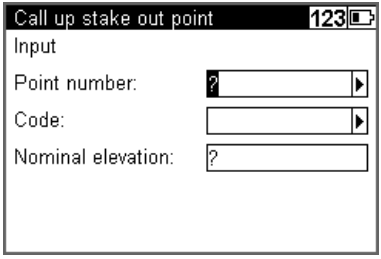
Actions	Screen
Select **Survey** and **3 Intermediate Sights**	
Select Point number from the drop-down list or key in the benchmark point with number, code and height of your choice.	

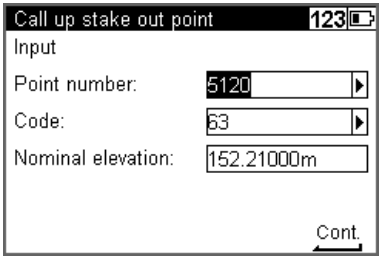
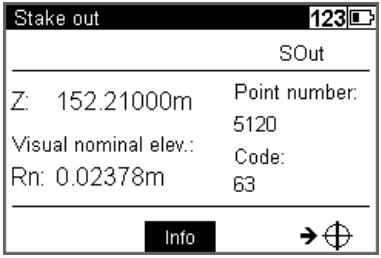
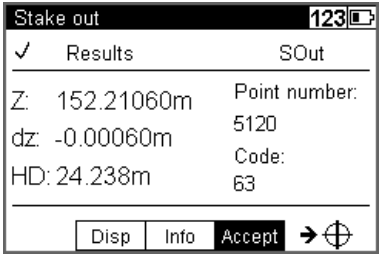
Actions	Screen
Press ↵ enter key to continue.	
Aim and focus the instrument to the staff at the benchmark. Start the measurement with the ⊕ / ◯ trigger key.	
Accept the measurement to benchmark point or repeat the measurement.	

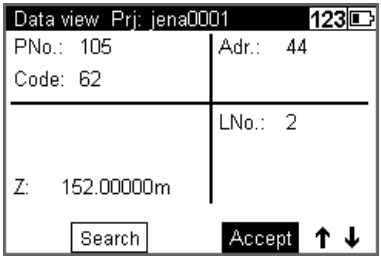
Actions	Screen
Key in the point number and code for new point. Start the measurement with the / trigger key.	
Key in the point number and code for next new point. Start the measurement with the / trigger key.	
Press escape key Select Yes and press enter key to end the program.	

Stake Out

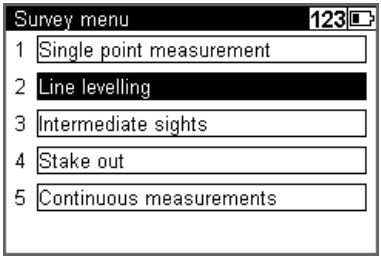
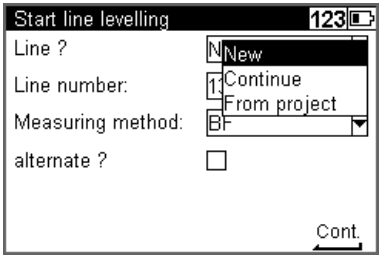
Actions	Screen
Select **Survey** and 4 **Stake out.**	
Select **Point number** from the drop-down list or key in the benchmark point with **Point number**, **Code** and **Benchmark height** of your choice.	
Press ↵ enter key to Continue.	

Actions	Screen
Aim and focus the instrument to the staff at the benchmark. Start the measurement with the / trigger key.	
Accept the measurement to benchmark point or repeat the measurement.	
Select **Point number** from the drop-down list or key in the **Point number**, **Code** and **Benchmark height** for the Stake out point of your choice.	

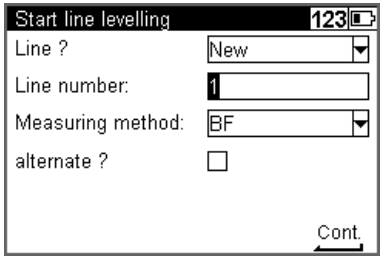
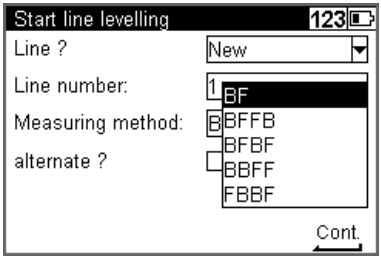
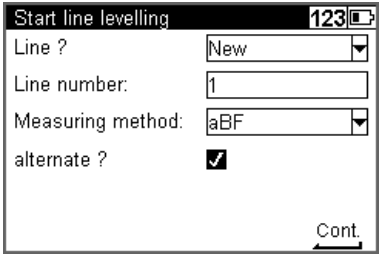
Actions	Screen
Press ↵ enter key to Continue.	
Aim and focus instrument to staff at Stake out point. Start the measurement with the ⊕ / ◯ trigger key.	
Select accept and press ↵ enter key to confirm and save the result.	

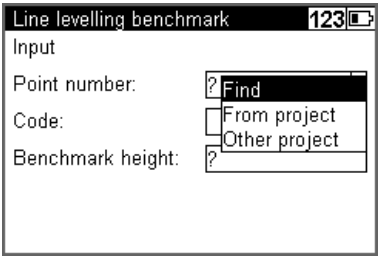
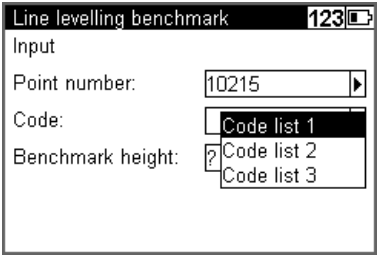
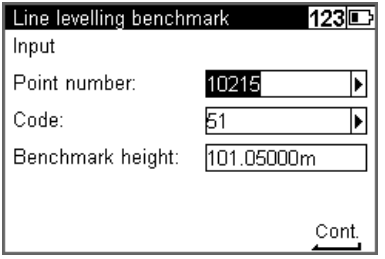
Actions	Screen
Select **Down arrow** and press ↵ enter key to call up the next Stake out point or press Esc escape key to key in the next Stake out point or use Search to define the next search criteria.	

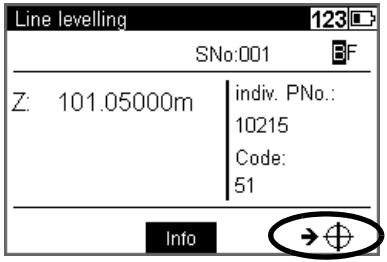
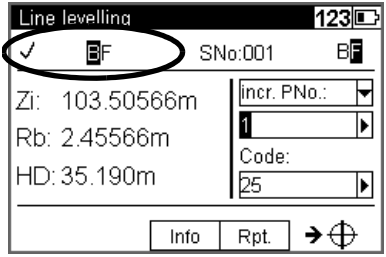
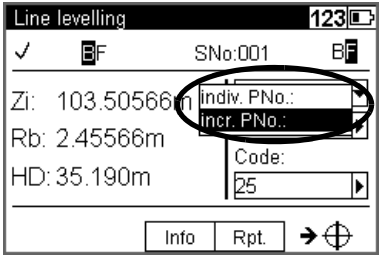
Line Leveling

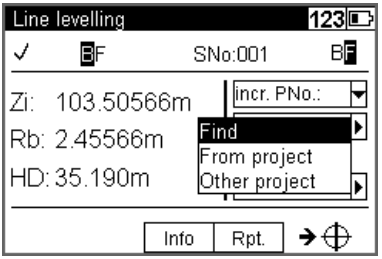
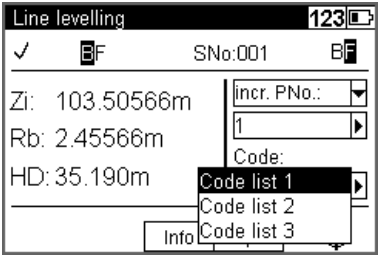
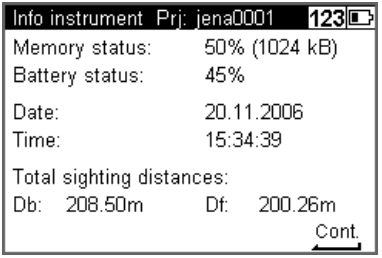
Actions	Screen
Select **Survey**. Select **2 Line leveling**.	
Select **Line ?**	

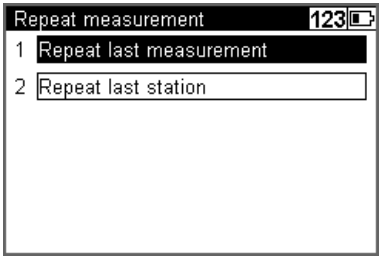
TIP – To minimize potential problems in long lines, we recommend to insert now and then fixed change points where the line ends and is continued immediately with the “continue line” option. This operation (line end / continuation) does not affect further line computing, but enables you, in case of a problem, to link the possibly lost line to this point and to connect later the partial lines manually (to add them).

Actions	Screen
Key in the **Line number** of your choice.	
Select the **Measuring method**.	
Select or deselect **alternate**. To confirm the inputs on this page and continue to the next page press enter ↵, **Cont.**	

Actions	Screen
Select **Point number** from the drop-down list or key in the point number of your choice.	
Select **Code** from the drop-down list or key in the code of your choice.	
Key in the benchmark height.	

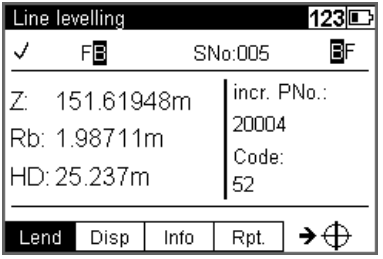
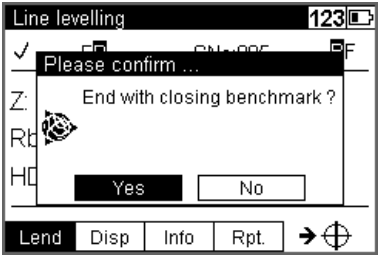
Actions	Screen
Aim and focus the instrument to the staff. Start a backsight measurement with the / trigger key.	
When the backsight measurement is ready the result will be displayed	
Select incremented or individual point number.	

Actions	Screen
Select **Point number** from the drop-down list or key in the point number of your choice.	
Select **Code** from the drop-down list or key in the point number of your choice.	
Select **Info.** As total sighting distances are known, the next stations have to be selected in such a way that the total sighting distances Db and Df are almost identical at the end of the line.	

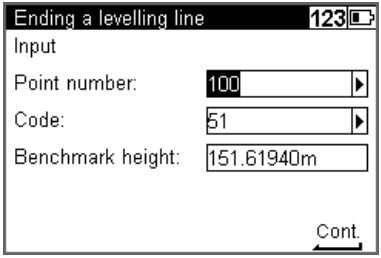
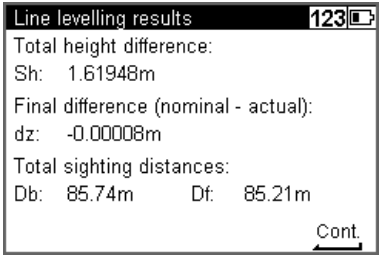
Actions	Screen
Select **Rpt.** if you wish to repeat the last measurement or the last station	

TIP – While measuring the Line Levelling Intermediate Sights and Stake out cane be done via Trimble menu!

Ending a Leveling Line

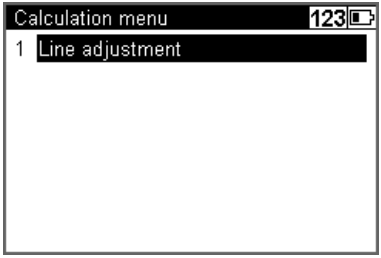
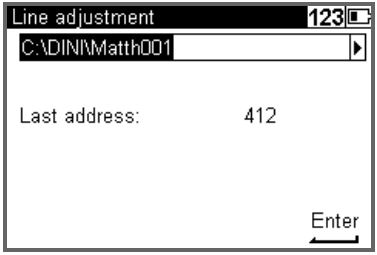
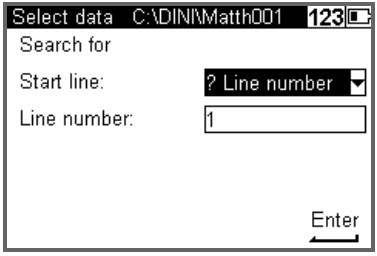
Actions	Screen
Select End	
Select Yes at a point with a known height. Select No at a point with a unknown height	

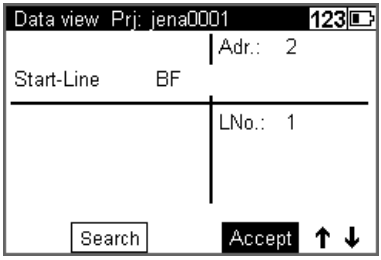
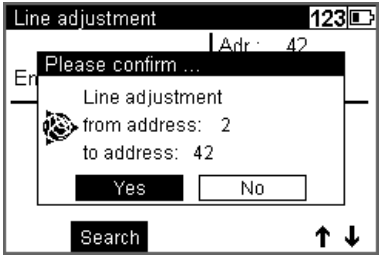
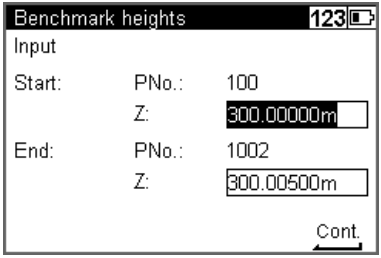
With known Height

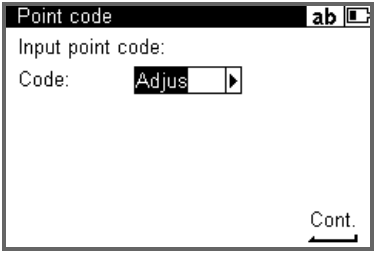
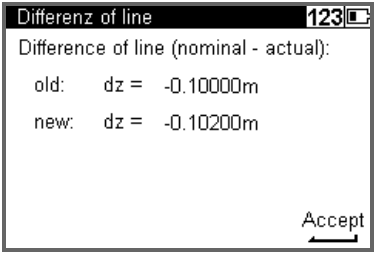
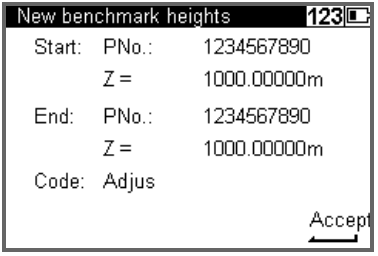
Actions	Screen
Select: A - without any change (Slope) B - Enter point number, code and height from your choice C - select from the memory a known point. Select Cont. to continue	
Select End to finish the line	

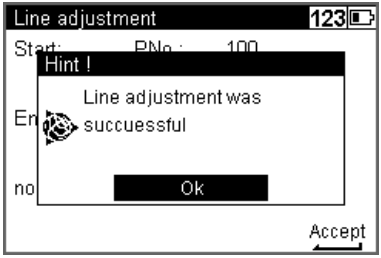
TIP – Ending a leveling line with unknown height is similar.

Line Adjustment

Actions	Screen
In the Main dialog select **Calculation.** Select 1 **Line Adjustment**.	
Select the project to be adjusted and press ↵ enter key to continue.	
Define the search criteria and enter the value of your choice. Press ↵ enter key to continue.	

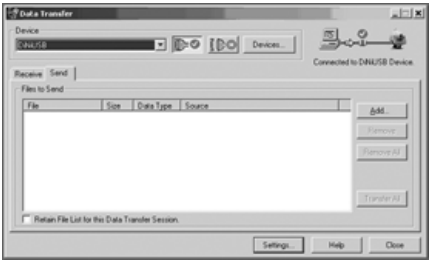
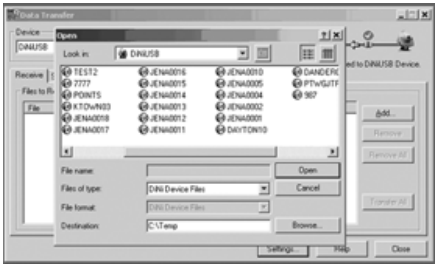
Actions	Screen
Select **Accept** and press enter key to accept the proposed line. Press spider key up or down arrow to search for lines with the same criteria.	
Select **Ok** and press enter key to continue.	
Key in or confirm the proposed **Benchmark heights** press enter key to continue.	

Actions	Screen
Key in or confirm the proposed **Code** for the changed Benchmark heights. press ↵ enter key to **Continue**.	
Press ↵ enter key to **Accept**.	
Press ↵ enter key to **Accept**.	

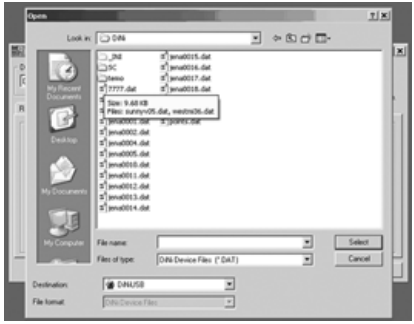
Actions	Screen
Press ↵ enter key to continue Line adjustment in progress Please wait	
Finalize the adjustment by pressing ↵ enter key to **End**.	

Data Transfer

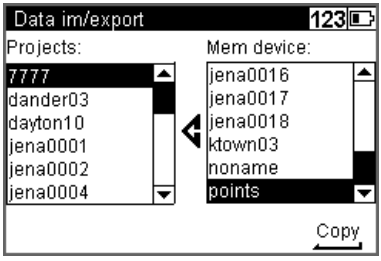
DiNi to PC

Actions	Screen
• Connect PC via cable PN 73840019 to the Trimble DiNi. • Start Trimble Data transfer at the PC. • Use Device "DiNiUSB".	
• Use the "Receive" tab • Select the files for transferring to PC. • Define the folder at the PC and start the data transfer.	

PC to DiNi

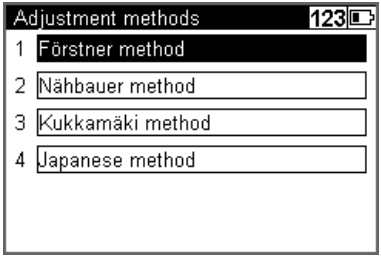
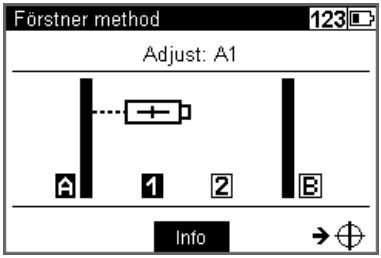
Actions	Screen
• Use the “Send” tab • Select the files for transferring to DiNi • Start the data transfer.	

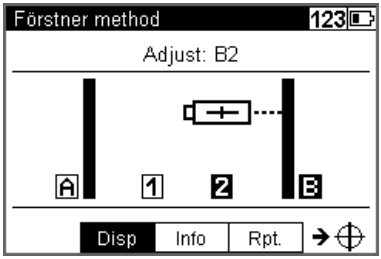
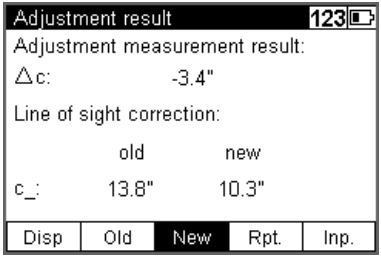
DiNi to USB

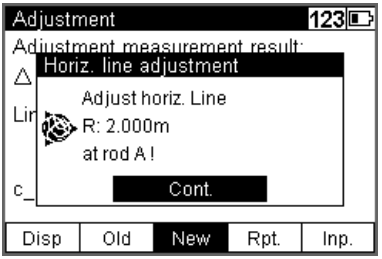
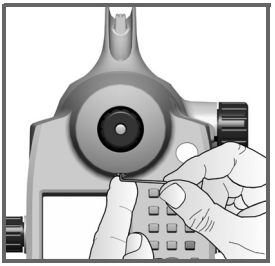
Actions	Screen
Connect the USB Memory Stick via cable PN 73841019 to the Trimble DiNi. The instrument offers the possibility to open the menu for Data import and export directly. The instrument allows copying files in both directions.	

Instrument Adjustment

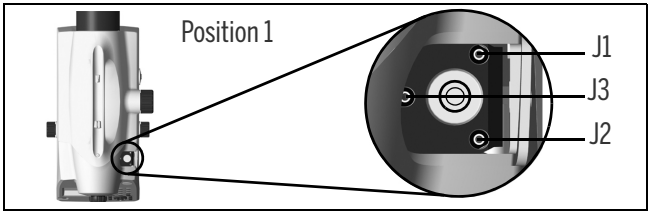
Line of Sight Adjustment

Actions	Screen
Select the method of your choice. In this example we will show the **Förstner method**.	
Aim and focus the DiNi at staff A from position 1, press ◯ to measure. Display will change to Show adjust B1 Aim and focus the DiNi at staff B from position 1, press ◯ to measure.	

Actions	Screen
Aim and focus the DiNi at staff B from position 2, press ◯ to measure. Display will change to Show adjust A2 Aim and focus the DiNi at staff A from position 2, press ◯ to measure.	
The result of the adjustment will be displayed. To accept the new value select **New** and confirm with ↵ enter.	

Actions	Screen
Turn the staff A around or replace it with a metric graduated staff and compare the reading with the specified value **R**. If the difference exceeds 2 mm, the reticule position needs to be aligned.	
Remove cap and adjust the setting screw below the eyepiece until the actual and nominal readings are identical.	

Bubble Adjustment



1. Remove the screw (2) of the protection cap with the adjusting tool and detach the protection-cap
2. Level the instrument with the 3 tribrach screws, Position 1.
3. Turn the instrument 180° round the vertical axis into position 2.
4. Eliminate half the residual deviation of the circular bubble by means of the tribrach screw and half by adjusting the circular bubble with the adjustment screws J1, J2, J3.
5. Repeat this procedure and check the residual deviation.
6. Fix the protection cap again. Make sure that the rubber joint is placed in the groove.