

User manual

Postax

Version 2.2 Revised: 2018-03-05

A software for DP II





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Support contract

Support agreements for software products concluded separately between the buyer / user and seller, and are in some cases in the purchase price for a limited period of time (usually 12 months). If the support agreement entered into with Haglöf Sweden, sent a bill for extended support contracts automatically when this time expires. To terminate the support agreement, please contact Haglöf Sweden. Please contact us in case of doubts and questions so that we can help you.

Important Information

Read the manual before using the application.

Should you upgrade your application please read the section on <u>Revision</u> <u>history</u> before performing the upgrade. <u>Otherwise, data could be lost</u>.

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Postax for DPII

Postax is used for determining a trees relative position to a plot center. Plot Coordinates, Plot Id, Plot Radius, Coordinate system, Distances, Species, Diameters and Heights are entered into the program.

With the received distances and diameter, coordinates, Cartesian and Polar, for the center of the tree relative to a plot center are calculated and shown in the display continuously.

The distance from the tree to the plot center can be measured with the Postex VL5 instrument and transfered to the DPII caliper or using the Postex DME instrument directly attached to the caliper.

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Getting started

Digitech Professional

To be able to get started and using the Digitech Professional it can be a necessity to comprehend the functions of icons and keystrokes.

Navigation keys, overview



	Ico n	Key(s)	Description
1		Left	Step/Move Left, decrease a value
2		Right	Step/Move right, increase a value
3		Up	Step/Move up, increase a value
4		Down	Step/Move down, decrease a value
5	\otimes	Up + Left	Shut off
6	ö	Up + Right	Activate background light.
7	1	Down + Left	Exit,Escape
8	Δ	Down + Right	Activate IR receive

How to navigate in a menu

Use Up- or Down-button to select an alternative in the menu. Press Enter to confirm a choice in the menu. Go back in the menu by pressing

Escape 💙 (Left- and Down button simultaneously).

How to change a text string

Use Left- and Right-button to change position in the text string and use Up- and Down-button or the scale to change value. Press Enter when finished.

How to change a value

In most cases the value is changed by using the Down-button to decrease the value by 1, the Left-button to decrease the value by 10, the Up-button to increase the value by 1, the Right-button to increase the value by 10. The scale can also be used. Press Enter when finished.

But sometimes the value is changed the same way as a text string, that is: use Left- and Right-button to change position in the string and use Up- and Down-button or the scale to change value. Press Enter when finished.



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Load Program

With the new DP II caliper you use a USB cable and your file explorer in your PC to load a new program into the caliper.

- A program file for the caliper DP II must have a `.DP2`extension.
- Reset the caliper by pressing all five (5) buttons simultaneously. In the <u>System menu</u> choose <u>USB</u>. Attach the USB cable and adapter to the caliper.
- 2. PC: Start the File Explorer, choose the program file which you shall install. (DP2 extension). Then copy the file and paste it in the calipers file directory \PRG in the calipers SD CARD.
- 3. In the <u>System menu</u> in the caliper select <u>Select program</u> and select the file, press enter and choose open file.
- Before you start the program a valid license key must be specified. Select <u>license</u> in the program menu. The retailer of the caliper will handle you a valid license code. The press <u>Start</u> and the program will start.

Program specifications

Max number of plots	300
Min Diameter	1 mm
Max Diameter	2 m
Min Height	1 dm
Max Height	500 dm

Version history

Version 1.8

Developed from Postax DP version 1.8

Version 1.9

- When using Postex DME and angle to plot center the three distances showing are calculated to horizontal distances.
- When the measuring of distance is unsuccessful you will now end up retaking the diameter and distance again.
- When entering tree number the scale can not be used for editing values.
- Earlier warning of tree is outside of the plot.
- Can enter heights on measured trees from menu alternative.

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Version 2.0

- Corrected printouts regarding loxal x and y coordinates and lat lon values in csv, kml and txt printouts.
- This version is compatible with previous **version 1.9**, so you can print data entered with previous **version 1.9**.

Version 2.1

- Added species, 30 species now.
- Updated printout of polar coordinate variable angle when using Postex DME to print two decimals, only printed in whole degrees before.
- Updated printout of local tree coordinates, lat lon, to print seven decimals instead of 6 as before.
- Added separator information in the *csv file in order to be able to just double click on it to be opened in directly in excel.
- Added the editable tree nr to csv printout.
- This version is **NOT** compatible with previous versions, so you can **NOT** print data entered with previous versions.

Version 2.2

- Updated conversion between coordinate systems in order to retrieve more precision on tree coordinate, variables latitude and longitude.
- This version is compatible with previous **version 2.1**, so you can print data entered with previous **version 2.1**.

Flow sheet for measuring

- 1. Choose <u>Plots</u> and press Enter. Choose whether to make a new plot or choose an existing one.
- 2. If you have chosen to edit tree number you will be able to do so now.
- 3. Choose Species and press Enter. Enter Diameter.
- 4. Use the Postex VL5 instrument or the Postex DME instrument to measure the 3 distances. The X and Y coordinates relative to the center of the equipment is calculated and shown, in dm. You can skip the distances as well by pressing Enter.
- 5. Enter height if wanted. Note that you also can enter heights among measured trees when the plot is done.

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Main menu

Main menu is reached when starting the program Postax.

PLOTS	Handling of plots
PRINT ALL	Prints all data, tab separated or KML
DELETE	Delete one or all plots
SETTINGS	Settings for the caliper, switch Postex DME
	ON/OFF, Cross Scaling ON/OFF and the possibility
	to edit the tree number ON/OFF.
RESET	Quits the program and resets the caliper to the
	system menu.
SHUT OFF	Shuts the caliper OFF.
<u>USB</u>	Puts the caliper in USB mode to get access to the
	files on the caliper SD Card.

Plot menu

This is where you work with your plots by measuring trees, creating new plots, erasing trees and printing single plots.

How to enter Plot menu

Choose **<u>Plots</u>** and press Enter.

How to create a new Plot

Choose **<u>Plots</u>** → **New Plot** and press Enter.

Enter Plot Id , Plot Radius , and which Coordinate System to be used for displaying coordinates.

Then choose to take plot coordinates from a Bluetooth GPS or not.

A new Plot is created and activated.

How to print an active Plot

- 1. Choose <u>Plots → Print</u> and press Enter.
- 2. Choose Tab separated printout or Googel Earth printout.
- Choose To File to create a printout file. This file will be saved on the caliper SD Card and can latter be transferred to a PC via USB.

Choose Kermit or Ascii printout via the caliper serial port.

How to reach the main menu

 Choose <u>Plot → Exit</u> and press Enter and you'll end up in the main menu.

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Measure

How to start to measure

- 1. Whilst in the Plot menu choose <u>Measure</u> and press Enter. The display now shows the number of trees.
- 2. If you have chosen to edit the tree number you can do so now. The number is automatically increased by 1.
- 3. Enter <u>Species</u> by using the navigation keys, Press Enter to confirm.
- 4. Scale the **Diameter** and press Enter.
- 5. Transfer the 3 distances from a Postex VL5 instrument or use the Postex DME to measure them from the caliper. Press Enter to confirm.
- 6. If Postex DME is used the 3 distances showing will be the horizontal distances if angle to plot center is used.
- 7. Enter <u>Height</u> if wanted. You can also enter heights after the plot is finished by choosing among the measured trees.
- 8. If the calculated distance from plot center to the tree is larger than the plot radius a question whether to save the tree or not will be posed.
- 9. Return to 3.

How to delete a tree

- 1. Choose **Delete Tree**.
- 2. Then choose the tree you want to delete.

How to measure heightselete a tree

- 1. Choose Heights.
- 2. Then choose the tree you want to edit/take a height on.
- 3. Enter the height and press Enter to store.

Double scale

- 1. While measuring diameter press navigation key down when the scale is at 0.
- 2. Then 50 cm will be added to the value of the scale reading. It will also show in the display as (+50).
- 3. It will switch off for the next tree or by repeating the procedure in point 1.

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How to transfer distances from Postex VL5 Instrument via Infra Red

- 1. Data from the Postex VL5 instrument can be transferred to the Handheld Computer via Infra Red (IR)
- 2. Measure distances to the transponders with the Postex VL5.
- 3. Activate IR-reading in the Handheld by pressing Speed Button \triangle (Simultaneous pressing Down- and Right button).
- 4. Aim the Postex VL5' IR transmitter towards the Handheld computer IR-receiver and press one or more times on the Vertex' IR-button. When data is received the display in the Handheld will feature a square containing the information transferred from the Postex VL5.

How to transfer distances from Postex VL5 Instrument via Bluetooth

- 1. Data from the Postex VL5 instrument can be transferred to the Handheld Computer via Bluetooth.
- 2. Activate the Bluetooth in the Postex VL5.
- Make sure that you have activated the receiving positions via Bluetooth option under <u>Settings → Bluetooth VL</u> in the main menu of the program.
- 4. Go to <u>Measure</u> and connect to the Postex VL5.
- 5. Start measuring the tree.
- Activate IR-reading in the Handheld by pressing Speed Button △ (Simultaneous pressing Down- and Right button).
- 7. Measure distances to the transponders with the Postex VL5. Send the positions to the Handheld. When data is received the display in the Handheld will feature a square containing the information transferred from the Postex VL5.

For more information about how to use the Postex VL5 Instrument, look in the User Manual for the Postex VL5.

How to measure distances, Postex DME

- Make sure that you have activated the PosTex DME option under <u>Settings → Postex DME</u> in the main menu of the program.
- 2. Attach the Postex DME unit to the caliper.
- In the Plot menu use the <u>PostexDME Dist</u> function to activate the transponders and to check that the transponders are placed at the correct position on the tripod.
- Go to <u>Measure</u> and start measuring the tree. The program will automatically measure the distance after the diameter has been entered.
- 5. If Postex DME is used the 3 distances showing will be the horizontal distances if angle to plot center is used.

For more information about how to use the Postex DME Instrument; look in the User Manual for the Postex DME or in the quick guide latter on in this manual.

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How to switch on/off cross scaling

Cross Scale allows the option of making two diameter readings. For example, at the datum height two caliper measurements at right angles can be made and the result averaged, or measurements above and below the datum height in the event that there is some anomaly with the tree at the datum height.

- In the main menu choose <u>Settings → Cross Scale</u> and press Enter.
- 2. With the navigation key right you switch cross scaling ON/OFF. Press Enter and your choice is stored.

How to switch on/off edit tree number

- In the main menu choose <u>Settings → Tree Number</u> and press Enter.
- 2. With the navigation key right you switch the possibility to edit tree number ON/OFF.
- 3. Press Enter and your choice is stored.
- 4. You should decide before creating a new plot whether editing tree number should be active or not, otherwise it can be perceived as confusing if the numbers do not add up.

How to switch on/off Postex DME

- In the main menu choose <u>Settings → Postex DME</u> and press Enter.
- 2. With the navigation key right you switch if to use Postex DME ON/OFF.

Press Enter and your choice is stored.

How to switch on/off receiving positions via Bluetooth

- In the main menu choose <u>Settings → Bluetooth VL</u> and press Enter.
- 2. With the navigation key right you switch if to use Bluetooth ON/OFF.

Press Enter and your choice is stored.

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Printing

Printout Excel

If you print in the main menu all the plots will be printed. If you print in the plot menu only the active plot will be printed.

The structure of the print out is a tab separated text file with columns consisting of these variables for each tree:

1.	Plot Id	[xxx]
2.	Plot Radius	[m]
3.	Plot Coord	Lat
4.	Plot Coord	Lon
5.	Tree Number	(counter)
6.	Tree Species	
7.	Tree Diameter	[mm]
8.	Tree Distance 1	[cm]
9.	Tree Distance 2	[cm]
10.	Tree Distance 3	[cm]
11.	Tree Height	[dm]
12.	Tree Cartesian Coordinate X	[m]
13.	Tree Cartesian Coordinate Y	[m]
14.	Tree Polar Coordinate R (Distance)	[m]
15.	Tree Polar Coordinate T (Angle)	[deg]
16.	Tree number	(The editable tree number)

Printout Google Earth

Print a file to be opened in Google Earth. Print the plot center with plot information (Id,radius,lat,lon, and the trees on that plot) and the trees with their specific info (Nr,spec,hgt,dist1-3,x,y,r,theta)

Printout Comma separ

Comma separated text file.

1. Plot.	
2. Plot_Radius	[m]
3. Nr	
4. Tree_Spc	
5. Tree_Dia	[mm]
6. Tree_Hgt	[dm]
7. Tree_PosTex1	[cm]
8. Tree_PosTex2	[cm]
9. Tree_PosTex3	[cm]
10.Tree_Local_x	[m]
11.Tree_Local_y	[m]
12.Tree_Local_Dist	[m]
13. Tree_Local_Angle	[dd.dd]
14. Latitude	[dd.dddddd]
15. Longitude	[dd.dddddd]
16. Tree number	(The editable tree number)

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How to send

To File

The files will be created and stored on the caliper SD CARD. To retrieve them:

- 1. Connect the caliper with a USB cable to the PC and select the option **USB** in the main menu.
- 2. Open a File Explorer in the PC and locate the folder "Data\POSTAX" on the caliper SD CARD.

Kermit

- 1. Connect a USB or serial cable and adapter between the Handheld serial port and the PC.
- 2. PC: Start WinDP
- 3. PC: Kermit receive
- 4. PC: Select directory and press Open.
- 5. Caliper: Choose Kermit and press Enter.

💐 WinDP	
Communication Language Help	
Settings	Kermit send
Load program	Kermit receive
Data to printer (4800baud)	Receive data (ASCII)
Exit	

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ASCII, Printer

The only difference between ASCII and Printer is that in Printer the baud rate is set to 4800 while in ASCII the baud rate is what it is set in the handheld.

- 1. Connect a USB or serial cable and adapter between the Handheld serial port and the PC.
- 2. PC: Start WinDP
- 3. PC: Use Receive data (ASCII) for ASCII and Data to printer(4800baud) for Printer.
- 4. PC: Select any filename or accept the default name (treelist.txt) where to store data.
- 5. PC: Select Save
- 6. Handheld: Select ASCII (or Printer).
- 7. Handheld: Press ENTER to start transmission from the Handheld.
- 8. PC: Press Print to print out.

💐 WinDP	
Communication Language Help	
Settings	Kermit send
Load program	Kermit receive
Data to printer (4800baud)	Receive data (ASCII)
E	xit
1	

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Quick Guide Postex System

Transponders

Three (3) transponders work together in the Postex system. Each transponder has its unique setting. For identification, each transponder has its unique color ring.

The transponders have ultrasound transmitters and a receiver that communicates with the Postex instrument. The transponders can be used both for aimed/direct measuring and for circular measuring with the 360 degree adapter. If you need to use a transponder for height measuring, remove Transponder A WHITE from the adapter at the tripod rack. It is important not to move the position of the arm when removing the transponder. The transponders WHITE, GREEN and BLACK should not be mixed up, and they should always be consistently positioned in its adaptor.

The Transponders are equipped with a beep signal, indicating ON or OFF status. The Transponders have no switch. The Postex instrument is used as a remote control to turn off and on. When turned on, the Transponder stays active for app. 20 minutes. After 20 minutes of inactivity, the transponder will turn itself OFF.

Each transponder uses one alkaline 1.5 volt AA battery placed under the battery lid



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Turn transponder on/off

Start the T3 transponder by holding the ultrasonic transceiver on the Postex instrument close to the centre of the transponder. If using the Postex VL5 Instrument press the DME button. If using the Postex DME Instrument; start a distance measurement in the caliper program. Await two (2) short beeps from the transponder. The T3 transponder is now turned on and will remain active in ON mode for approx. 20 minutes before automatic turn off (battery saving function). To turn the T3 transponder off (OFF), repeat the procedure and wait for four (4) beep signals

Adapters



Four (4) adapters are included in a Postex system. Each transponder has an adapter. The fourth adapter is placed in the tripod center and used to place the bubble/libell on.

The adapter allows the ultrasonic signals to spread in a 360 degrees circle and enables the user to measure from any position from the tripod, (within the distance limit).



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Setting up the tripod

- Position the tripod and assemble and fold down the telescopic arms on the tripod rack with the three transponders mounted.
- Security check: Test the arms to be equal in length by aiming the Postex instrument facing down in the adapter placed in the centre. Measure the distances with the instrument using the ultrasound method.



Image 1

Transponder Tripod / Rack seen from above. 1 = Arm's length = center of tripod to center of adapter = 115.5 cm/3,79 ft. 2 = The center of the transponders form an equilateral triangle, where each side measures 200 cm/6.56ft.

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NOTE! It is of great importance that the distances to the transponders from the centre are equal. Divergences should never exceed 1cm/0.39". Also note that due to the height of the adapter on the tripod, distances greater than the arm's length will be obtained (arm length = centre of the tripod to center of the adapter = 115.5cm/45.04")

- 3. Place rack arms at horizontal level.
- 4. Aim transponder C facing north by aiming a compass through the tripod centre and through transponder C. If aiming transponder C (Black) towards North, the local coordinate system has a Y axis north-south and an X axis east-west (Image 1). NOTE! In land survey contexts, the X axis can sometimes be stated as north-south.
- 5. Measure the distances by aiming the Postex instrument towards the plot centre where the tripod is placed, with the backside of the instrument at the tree stem (image 2). Press the DME button on the Postex VL5 and hold the instrument steady until the three distance results are featured in the Postex display.

Max radius with the T3 transponders mounted on the tripod is, 0.00m-15.00m/0.00ft-50.00ft

Calibration of Postex DME

Ultrasonic pulses travel with different speed. In open terrain and without disturbing objects between the instrument and the transponder, distances up to 40 m or more can be measured to the T3 transponder. Always calibrate the ultrasound in the current temperature and make sure that the Postex has the same temperature as the air where measurements are to be made. To obtain maximum precision it is recommended to control and if necessary calibrate the instrument periodically, preferably daily.

To obtain maximum accuracy level in ultrasound measuring operations, the instrument needs to be calibrated.

- 1. Make sure the instrument has ambient temperature not colder and not warmer.
- 2. Measure the exact distance of 10m/32.8 feet with a tape or similar.
- 3. Place the T3 transponder at the finish of the exact 10 m distance.
- In the caliper and the Postax program go to <u>Settings->System-</u> <u>>Test->DpDme</u>.
- Start the T3 transponder by holding the ultrasonic transceiver on the Postex close to the centre of the transponder and use the <u>DME</u> function in the caliper. Wait for two (2) short beep signals from the transponder. The T3 transponder is now turned on and

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will be in ON mode for approx. 20 minutes before automatic turn off. To turn the transponder OFF, repeat the procedure and wait for four (4) short beep signals..

- 6. Go to the zero point on the measured distance and aim the front of the Postex instrument to the transponder.
- 7. Press Escape in the caliper..
- 8. Select <u>CAL</u> and press Enter to confirm.
- 9. When the digits 10.00 are shown in the display, the calibration of the Postex ultrasound is ready.

The temperature sensor in the Postex must be given time to adjust to ambient temperature. The adjustment can take more than 10 minutes. If the Postex is in a pocket with a temperature of $+15^{\circ}$ C and the outside temperature is at -5°C, the measuring result will be 10.40 m instead of the correct 10.00 m. the temperature pending measuring fault at 10.00 m is approx. 2 cm/°C.

It is important that the temperature sensor is given enough time to correctly determine the ambient temperature. If you are carrying the instrument in your pocket you might have to allow up to 10 minutes before you obtain accurate measurement results.

The error will decrease rapidly, but the final accuracy might take up to 10 minutes to achieve. Taking this into account, calibrating the instrument before the sensor has had time to stabilize will make the error "permanent". The display will then show the correct 30.00 feet for a short while, but a few minutes later the measurements will be inaccurate.

CALIBRATING WITH T3 TRANSPONDER ON AN ADAPTER

When the T3 transponder is mounted on an adapter the ultrasound is spread in a 360 - degrees circle. Measuring can be done from any optional position to the T3 transponder. The ultrasound travels three (3) extra centimetres/1,17", and the measurement result should always be read in the front of the Postex display on the Postex instrument.

An alternative way of performing calibration is to attach a measuring tape that passes through the T3 transponder centre at one (1) meter, and then calibrate the Postex at eleven (11) meters/36,8ft.

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Haglöf Sweden® AB is a company with long time experience of developing and manufacturing professional inventory and cruising products. Our solid knowledge in engineering mechanics has been growing and now also includes high technology electronics and specialized software development. Today Haglöf Sweden offers the most complete assortment of products for forest inventory and cruising on the market, all developed and manufactured in Sweden. Our portfolio includes increment borers, manual calipers, Walktax and complete measuring systems including both instruments and software.

Digitech Professional and DP II are the markets leading computer calipers and is used for cruising, log measuring, harvester calibration and much more. With many unique accessories and compatibility with other measuring instruments, DP II is the most complete measuring system for efficient fieldwork.

Haglöf Sweden works continuously to improve, simplify and make more effective the work for users of our products, and in DP II we guarantee that you have an instrument that is very flexible and which can be adapted after your demands and needs. A great amount of software solutions with hundreds of programs gives a flying start to new users.

More accessories and new solutions- often requested from users are continuously developed. Please contact us and visit us at www.haglofsweden.com for more information and news.

Haglöf Sweden's instrument is not only used within forestry, but also in building, planning and construction work. Also the police, army, research, archeology, geology, geography, power line control, fish measuring, conservation is areas were our products is used.

More than 200 companies around the world represent Haglöf Sweden's products and efforts quick and skilled service. For our Swedish customers we are never more far away than a phone call. If you as a software customer have signed a support contract, you will be given quick and professional help directly from our experienced software programmers. Please contact us if you have further questions.



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