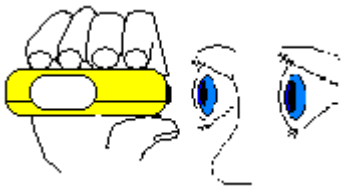
H

HCH V1

The HCH Haglöf Clinometer Compass with Height Measuring Function is used to measure horizontal and vertical angles. With the built-in compass, the HCH is great for forest inventories and survey work. The instrument is rugged and durable, yet small enough to fit in your pocket. The HCH features azimuth compass 0 - 360° graduated in 1° increments and accuracy to 2.5°. The clinometer measures -55° to +85°, graduated in 0.1° increments with accuracy to 0.2°. The HCH is operated with one button, it has magnetic declination and is easy to calibrate. The HCH Compass Clinometer with Height Function has an adjustable correction of local discrepancies as well as built-in digital functions that will adjust the compass if not held horizontally. Heights can be measured from optional distance and location in relation to the height position of the measuring object. The built-in compass function offer better functionality and increased utility and uses a regular AA battery to operate.

TO USE

Maintain both eyes open when measuring. One eye reads the display and the other eye monitors the measuring object/surrounding. After only a short time this way to work will feel comfortable, and the advantage is that you can avoid measuring the wrong tree height for example.



FUNCTION

Select function by pressing the button a number of times according to the below:

1press	Ht	Height measuring
2presses	C º	Compass (0..359 º)
3presses	Ang	Angle measuring (-55.0 º..+85.0 º)
4presses	SET	Setting and adjustment of local deviations
5presses	CAL	Calibration of the compass

BATTERY

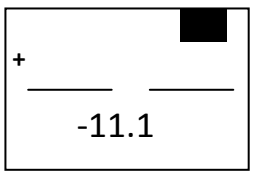
HCH uses one standard AA (LR6) battery to operate. A warning is displayed if the battery is weak and goes below 1.0V. The warning comes up as a text message (BAt) for a short second when turning on the HCH.

DISTANCE AND HEIGHT MEASURING

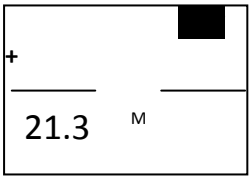
The HCH uses the factual distance from the measuring point (the eye) to the lower part of the measuring object. You will not have to state any horizontal distance.

Register the distance by pressing the button and tilting the instrument up and down. Release the button when you have reached a desired value. If the angle is too narrow to obtain the value you need, simply release the button and start over. By repeating until you reach the desired value, an optional distance from 0 to 999m/ft can be set. Note that the HCH instrument does not measure distances! The more accurate the input distance value, the more accurate the height measuring results. The distance can be measured with a measuring tape, a thread meter or an ultrasound measuring device, please visit www.haglofsweden.com for different models.

Complete the distance registration with a short button press. Last input value remains in the HCH instrument memory.



Measure the angle to the lower part of the measuring object by aiming with the two horizontal lines in the display. Press the button.



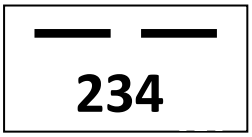
When a result is displayed, aim at the top or other optional height on the same object and press the button again. If you wish to measure more heights on the same object, simply repeat the process of aiming, pressing and releasing the button.

'C º' (COMPASS)

Note: The compass needs to be calibrated before it is used. Calibration is made in the menu CAL. It is also necessary to adjust the difference between true (geographic) north and magnetic north in the **SET** menu.

Metal framed glasses can cause disturbances in the compass function. If you are wearing metal framed glasses, calibrate the instrument with the glasses on (see **CAL** below). Also note that surrounding magnetic fields can cause disturbances in the built-in compass, as with all compasses.

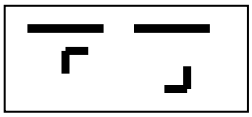
- Important! All compasses use and are affected by Earth's magnetic fields
- All compasses are sensitive to disturbances in the surroundings caused by for example the following: heavy metals, household appliances, computers, high voltage power lines, etc.

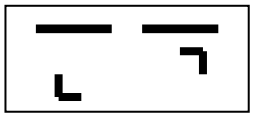


Push the button one time. The bearing is displayed. Use the two linear lines in the display as your aim. Hold the instrument plane when measuring or values may be incorrect! The instrument will compensate the compass angle up to +-10 degrees. If leaning the instrument, an image/ message will be displayed urging you to correct the position.


Tilt the HCH upwards!


Tilt the HCH downwards!


Turn the HCH clockwise!


Turn the HCH anti-clockwise!

Complete the measurement by giving a short press on the button one time.

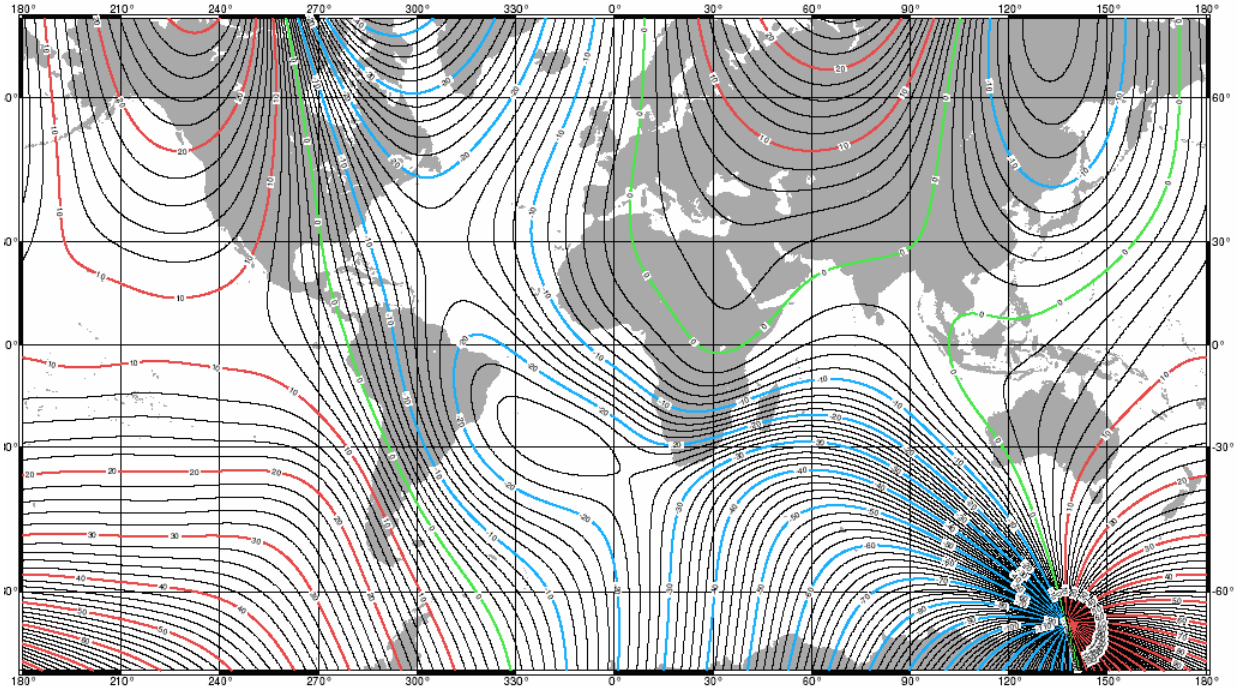
’ANG’ (ANGLE MEASURING)

Press the button three (3) times. The current angle is displayed. Use the two horizontal lines in the display as aim. Complete the measuring with a short button press.

’SET’ (SETTINGS)

The deviation varies from location to location. To compensate for the deviation, you need to consider the location you are presently at when adjusting the compass. Note that the deviation can vary from time to time as well. Choose **SEt** to set the current local deviation between true north and magnetic north. The HCH will automatically correct the measured compass angle with the set deviation. Activate the SEt menu by pressing three (3) times on the button. Register the deviation by pressing and keeping the button depressed and tilting the instrument up and down. Release the button when the desired value has been registered. If the angle is not big enough to obtain the desired value, release the button and start over. By doing this, you can obtain optional deviation between -45º and 45º. A short press on the button finishes the registration. The input value will remain in the HCH memory also if removing the battery.

*Without compensation for ex. in Stockholm the compass will show 0 degrees at magnetic north. Since the deviation is 2º degrees to geographic north, the setting should be 2º in the **SEt menu**. The compass will now show correct result - 2º.*



Deviation in some large cities:

INTERNATIONAL	
Anchorage	22º
Atlanta	-4º
Bombay	-1º
Boston	-16º
London	-4º
Little Rock	3º
Livingston, MT	14º
Münich	1º
New York City	-14º
Orlando	-5º
Oslo	-2º
Paris	-2º
Calgary	-18º
Chicago	-3º
Denver	10º
Jerusalem	3º
Rio de Janeiro	-21º
San Francisco	15º
Seattle	19º
Shanghai	-5º
Toronto	-11º
Vancouver	-20º
Washington DC	-10º
Waterbury, CT	-14º
Stockholm	2º

'CAL' (CALIBRATION)

The compass needs to be calibrated at each battery change, also if the same battery is removed and used again or if the battery is somehow dispositioned.

The calibration is made in the CAL menu. Press four (4) times to activate the function. Rotate the HCH instrument during 10-20 seconds at least 1-2 rotations, preferably on a plane surface free from magnetic objects. Another option is for the operator to rotate while holding and aiming with the instrument, and this method is recommended if wearing metal frame glasses.

Finish the calibration after at least 1-2 spins by pressing the button. Important! Hold the HCH instrument plane both while measuring and calibrating! The built-in compass will show incorrect values if tilting the instrument. If the instrument is tilted during calibration, a message will be displayed urging you to correct the position, see section Compass, this manual. During calibration, the instrument shows how long time has passed since the calibration started (maximum timed 20 seconds). NOTE! Always test the compass function in at least four (4) directions after calibration!

TECHNICAL DATA

Size:	20x63x44mm/0,8x2,5x1,7"
Weight:	50g/1,8oz incl battery
Battery:	1xAA (LR6)
Battery warning:	Yes
Display:	LCD
Backlit display:	Yes
Summer:	Yes
Consumption:	15mW
Distance:	0-999m/ft (manual feed)
Height:	0-999m/ft
Resolution height:	0,1m/ft<100m/ft; 1m/ft>100m/ft
Angle:	%/deg, -55deg…+85deg
Accuracy angle:	+-0.2deg
Resolution angle:	0.1deg

DECLARATION OF CONFORMITY

According to the EMC Directive with amendment 92/31/EEC, Low Voltage Directive 73/23/EEC and CE Marking Directive 93/68/EEC. Type of equipment Clinometer. Brand name or trade mark Haglöf. Manufacturer's name, address, telephone & fax no: Haglöf Sweden AB, Klockargatan 8, SE-882 30 Långsele, Sweden. **Tel:** +46 620-25580**, Fax:** +46 620-20581, info@haglofsweden.com; www.haglofsweden.com The following standards and/or technical specifications, which comply with good engineering practice in safety matters in force within the EEA, have been applied: ***Test report/ technical construction file/normative document.*** Ref.no 03087/Issued by Haglöf Sweden AB.Standards EMC Emission EN61000-6-3: 2001, EN 55022 Class B. EMC Immunity EN61000-6-2: 2001, EN 6100-4-2, -3. The HEC Product was CE marked 2003. As manufacturer established within EEA, we declare under our sole responsibility that the equipment follows the provisions of the Directives stated above.

WARRANTY AND SERVICE INFORMATION

Haglöf Sweden AB warrants that this product shall be free from defects in materials and workmanship, under normal intended use, for a period of 12 months after date of shipment. The warranty excludes the battery, the accessories and any written materials. The warranty does not apply if the product has been improperly installed, improperly calibrated or operated in a manner not in accordance with the user guide. Warranty is also automatically expired if the product has been opposed to external force and warranty is not applicable for cosmetic defects.
The one-year limited warranty time covers obvious fabrication defects. Defects in the electronic components that are impossible for the manufacturer to detect prior to assembling and shipping of the product may occur. Haglöf Sweden AB can in no case be responsible for problems of this nature and has no liability for any loss of business, profits, savings, consequential damages or other damages resulting from use of the products described. Signs of misuse, cosmetic damage, accidents or equal automatically withdraw the warranty. The warranty is valid in the country where your Haglöf product has been purchased. A product covered by warranty will be object to exchange, service, and repair or according to special agreement between seller and buyer, within the frames of the limited warranty. Haglöf Sweden reserves the right to determine which option will be most suitable for each separate case after having examined and evaluated the product.

IMPORTANT ISSUES:

For a valid warranty, a copy of invoice or dated receipt of your purchase must be presented. The serial number of the returned product has to be clearly stated upon return. Go to http://www.haglofsweden.com/PDF/HaglofRMA.pdf for return form/turn to your supplier for assistance.

The return freight to us is on buyer's expense. After warranty repair or exchange, the return freight to you is on our expense. If warranty has expired or is null and void, all freights are on buyer's expense.

If no original invoice can be presented upon shipment, or if two years have passed from date of purchase, a customs fee will be added by the applicable customs authorities and possibly in receiving country as well. These fees are on buyers account.

We perform repair and service of products where warranty has expired when possible. Cost estimation will be sent to you after evaluating the returned product for cost approval. Please also see above paragraph on customs fees.

Please do not hesitate to contact us or any Haglöf Sweden AB representative for questions or comments!

Any signs of misuse or negligence automatically withdraw our warranty commitments.

HAGLÖF SWEDEN'S PROFESSIONAL CLINOMETERS FEATURE

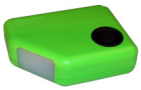
- **Reliable results**
- **Low battery consumption**
- **Uses regular 1.5V AA batteries for function**
- **Backlit display for easy reading**
- **Electronic results for improved accuracy**
- **One year full factory warranty**
- **Quality manufacturing**
- **Made in Sweden**

CHOOSE THE HAGLÖF INSTRUMENT MODEL THAT FITS YOUR MEASURING NEEDS AND EXPERIENCE THE DIFFERENCE WITH DIGITAL MEASURING RESULTS!

The EC II is an easy to use field instrument that offers accurate measuring results on inclination and heights of objects, usually trees. Heights are measured from any known distance. With electronic presentation of precision results, the EC II will serve you well for a long time, always giving accurate measurements without calibration or maintenance.

The C I is the ideal instrument when you wish to measure slopes and inclination of trees, buildings, walls, tunnels, roads and more. Various field professionals will appreciate the simplicity and accuracy of the C I.

The HEC-R offers accurate height results from any known distance. Use the built-in basal area functions to count number of stems in your HEC-R, using one out of four basal area factors (0.5,1,2,4 or 5,10,20,40). The HEC-R will automatically display a calculation of the basal area. One dominant tree height will be used to calculate volume/ha. Measure in m/deg; m/% or ft/deg, ft/% (factory set).



The HCH Compass with Height function has the potential to become your next favorite forest instrument: small, accurate, fast, easy to use and giving measuring results of inclination and heights measured from any optional distance and placing in relation to the object's position in the field - and including a built-in azimuth compass 0-360˚ graduated in 1˚ increments, and accuracy to 2.5˚. Ideal when building roads and power lines, demarcation of forest properties etc. Single button operation where the user can switch from compass to clinometer with one push. Built-in magnetic declination and easy calibration.

The HCC Haglöf Clinometer Compass is an inclinometer and a compass. Use the HCC to measure horizontal and vertical angles. This together with the compass makes the HCC *great for site survey in satellite installation.* Features azimuth compass 0-360˚ graduated in 1˚ increments, and accuracy to 2.5˚. Clinometer measures -55˚ to +85˚, graduated in 0.1˚ increments with accuracy to 0.2˚.The user can switch from compass to clinometer with one push. Built-in magnetic declination and easy calibration. The HCC Clinometer Compass measures in degrees.