



DME



User's Guide Version 1.3 English

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Welcome as an operator of a professional Haglöf Sweden® measuring solution! Our instruments are always developed in close collaboration with forest pro’s from every corner of the world, and we sincerely hope you will be pleased with your new precision instrument. The DME is a useful tool in forest cruising work, and especially when working in sample plots. The ultra sound technology in the DME works also in dense forests and for distances up to 30 m/yds and more.

Before starting to use the DME

The DME uses ultrasonic impulses to determine a distance. The speed for the ultrasonic signals to travel in the air depends on factors such as air humidity, air pressure and above all, the air temperature. The DME has a built-in temperature sensor that automatically will compensate divergences and give correct distance measures even if temperature changes. At delivery, the instrument has a basic setting installed that normally gives the measuring fault under 1%. To obtain optimal measuring result accuracy, the instrument should be checked and calibrated on a regular basis.

Functions in the DME measuring instrument

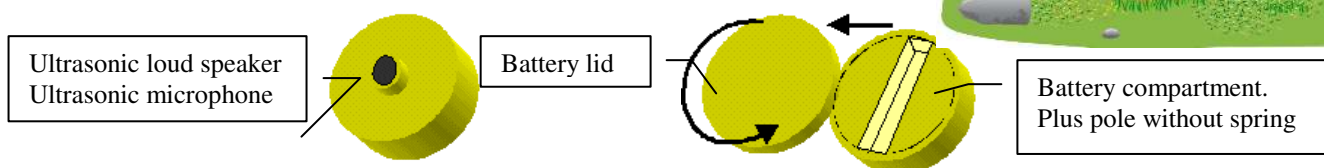
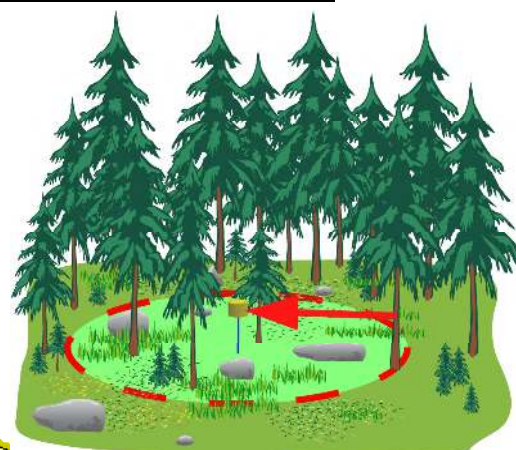
Number/Pressures Function		Other Display Features	
[F1]	Distance measuring	[- - -]	The DME is operating.
[F2]	The DME can be used based on a selected Prism Factor. <i>See F4 for prism factor selection.</i> Minimum tree diameter Based on a distance and prism factor will be displayed.		
[F3]	Measuring unit is reset to transponder function	[trP]	Measuring unit set as transponder.
[F4]	Select prism factor to be used when calculating the minimum diameter, <i>see [F2]</i> English = 5, 10, 15 and 20 -- Metric = 0.5, 1.0, 2.0 and 3.0, Make selection by pressing the red button.		
[F5]	Change measuring unit, Meter or feet		
[F6]	No function, Space reserved		
[F7]	Temperature		
[F8]	No function, Space reserved		
[F9]	Calibration		

To switch between transponder TYPE 1 or TYPE 2.

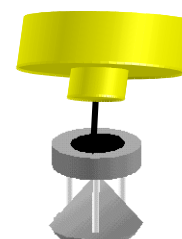
1. Remove the battery.
2. Pressure and hold down the button and insert the battery in position.
3. Change transponder type. [tYP1] or [tYP2].

Transponder T3

The transponder is an ultrasonic transmitter and receiver that communicates with the DME. T3 can be used for direct measuring (pinned to a tree stem) and for plot work in a full 360-degree circle, with the adapter and monopod. The transponder T3 has an audible beep signal that determines if it is activated. The DME instrument works as a remote control, where the T3 and the signal are turned off and on with the measuring unit. The transponder uses only one AA cell battery placed under the lid.



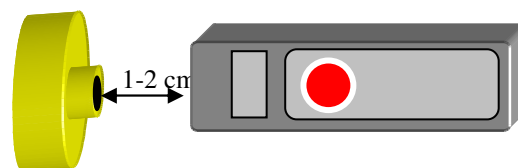
To measure in a 360 degree circle, use the adapter and monopod. The adapter is screwed on the monopod staff



How to use the Transponder T3

Start the transponder

To start the transponder, hold the loudspeaker of the DME measuring unit towards the transponder. Press the red button on the DME until 2 short beep signals are heard from the transponder.



Turn off transponder

To turn off the T3, hold the loudspeaker towards the transponder. Press the red button until 4 short beep signals are heard.

Turn off and on the beep signal

To turn off and on the beep signal of the T3, hold the DME loudspeaker towards the transponder. Press the red button until the signal stops or starts. This will take approximately 10-15 seconds.

Calibration

1. Use a tape to measure a distance of 10 meters between the transponder and the front of the instrument.
2. Give repeated short presses on the red button until function F9 is shown. The display should now show 10m and calibration is ready. The instrument will only approve if the interval is within 9.6 - 10.4 meter. Please go to www.haglofsweden.com for instructive film clips on how to calibrate your instrument!

Important to know regarding calibration

When calibrating the DME, it is important that the instrument has been given enough time to adjust to current temperature. (function F7). If the instrument is carried in a pocket, it can take up to 10 minutes before the DME has fully adjusted to current outside temperature. The temperature depending error is approximately $2\text{cm}/\text{C}^\circ$. *If for example the temperature inside the pocket is 15° and the air temperature is -5° , the measuring result of 10 meters will be 10.40m.* Best accuracy is obtained after 10 minutes after adjustment. If the instrument is calibrated without having adjusted to correct temperature, the measuring inaccuracy can be made permanent when calibrating the instrument.

To think about

The DME instrument solution is designed for outdoor use. Both the measuring unit and the transponder are water resistant. The most sensitive parts of the instruments are the ultrasonic transmitters. A special shield covers the transmitters, to keep moist, dirt and dust out of the cover. Never leave the transponder upside down in rain or snow, since this may cause water to reach the openings for the ultrasonic transmitters. When changing transponder battery, apply some light grease on the O-ring seal on the lock. Always use 9V alkaline batteries. Replace the batteries when normal resolution is not reached.

Setting unit in Trp Mode - Distance Measuring with 2 DMEs

This method is convenient when two users need to know the exact distance between one another, for example road width. Use function F3 and the text trP is shown in the display. Reset the instrument with one press.

Distance Measuring

Start and place the T3 transponder at the end of the distance or in the centre of the plot at the plot staff. Walk the distance (up to 30 m/yds, depending on conditions, temperature, weather etc). To obtain a correct distance measuring, direct the measuring instrument toward the transponder and press the red button one time. 4 lines [- - - -] will show in the DME display. After a few seconds the distance will appear in the display.

If the DME instrument have no answer from the T3 transponder, the 4 [- - - -] in the display will appear but no distance will be displayed. Please check if the transponder is set, and that the batteries are fresh. If the red button is kept pressed down, and you slowly move backwards, the instrument will measure and display the increased (or decreased if moving forward) continuously.



DME package: DME, T3, adapter and Monopod staff extending to up to 140cm. Batteries not included at delivery. Plastic safety case dimensions: 37 x 30,5 x 9,5cm.

BAF

To use your DME as a prism, choose your prism factor [F4] by pressing the red button 4 times. Once you have set the prism factor, select DBH Measuring at [F2] by pressing the red button twice. When you take a reading the number displayed is the minimum diameter that a tree should have to be counted in the plot, a calculation based on the set prism factor and distance to plot center. The advantage of using your DME instead of your standard prism is that you can utilize a point cruise even through thick vegetations. It also allows you to work your plot from the outside in instead of always from plot center out, saving you time and allowing you to take accurate diameter measurements.

Technical Details

DME	
Size:	3 x 4 x 12.5 cm/ 1,2x1,6x4,9 Inch
Weight:	90 g / 0,20 lbm. (incl. battery)
Battery:	9V alkaline
Current:	7mA
Temperature:	-15° - 45° C / 59 - 113 F
Ultrasonic Frequency:	25 kHz
Resolution:	0.01 m
Distance transponder pointed:	30 m/ 38,3 Yd. Or better at good conditions
Distance with 360° degree cone on trp.:	20 m/ 21,9 Yd. Or better at good conditions
Accuracy:	1% or better when carefully calibrated
Transponder T3	
Size:	Diameter 7.0cm, 2.8 Inch
Weight:	85 g (Incl. Battery)
Battery:	1 1,5V AA alkaline
Current:	1.0 mA

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 batteries, 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's 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 or more 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 representative for questions or comments!

www.haglofsweden.com



Haglöf Sweden® is a family owned company with a long tradition of developing and producing instruments for professional forest measuring work. Today, Haglöf Sweden manufacture and sell the most complete product range for cruising and inventory work. A profound know-how in workshop production technique has grown to encompass our state-of-the-art manufacturing of electronic instruments and field software.

There are over 200 companies representing the Haglöf Sweden brand name around the world. With self-owned and -run production facilities, the entire production process is under our control. This ensures availability and reliable deliveries for you, as well as prompt service and support when you need it, no matter where in the world you are located. Many Haglöf Sweden instruments are used outside the forestry industry, such as in building dimensions and utility industry, for road construction, in police work, gardening, power line survey, archaeology, geology and for wildlife management.