# DME

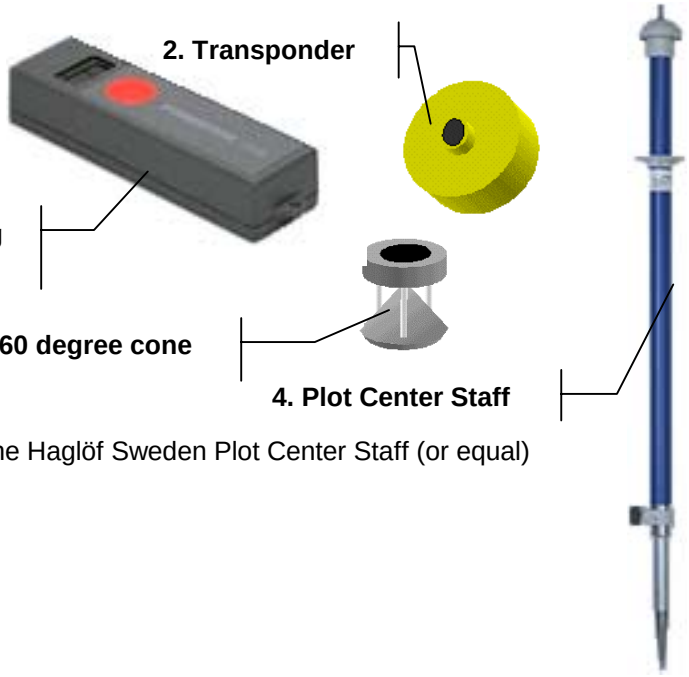
# USERS MANUAL

**2001-02-14**

---

**Your new distance measurer DME contains from the following units:**

1. Distance measuring instrument
2. Transponder
3. Activating pin
4. Plot Center Staff (if ordered)




The activating pin can be fastened to the Haglöf Sweden Plot Center Staff (or equal)

**Important to know before using the DME**

The DME 201 uses ultrasonic impulses to determine a distance. The speed for these signals to travel in the air depends on several factors such as air humidity, air pressure and most of all air temperature. The DME 201 has a built-in sensor for the temperature that automatically will compensate to give the correct distance 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 continuously calibrated if necessary.

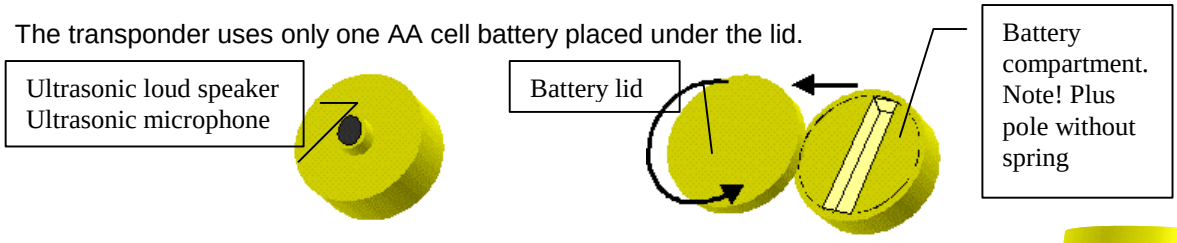
**Functions of the DME measuring unit**

| Number/Pressures Function | | Other Display Features | |
|---|---|---|---|
| **[ F1 ]** | Distance measuring | **[ F7 ]** | Temperature |
| **[ F2 ]** | Will allow the DME to be used as a Prism based on a selected Prism Factor. *See F4 for prism factor selection*. The minimum diameter tree for the distance and prism factor will be displayed. | **[ F8 ]** | No function, Space reserved |
| **[ F3 ]** | Measuring unit reset to transponder function. For measuring with two measuring units | **[ F9 ]** | Calibration |
| **[ F4 ]** | Select prism factor. This will be the prism factor used when calculating the minimum diameter for the known distance, *see [F2]*<br>English = **10, 20, 40**, -- (means not used)<br>Metric = **0.5, 1.0, 2.0**, -- Make your selection by pressing the orange button. | **[ - - - - ]** | Working. |
| **[ F5 ]** | Change unit, Meter or feet | **[ trP ]** | Measuring unit set as transponder |
| **[ F6 ]** | Change transponder type<br>**[ tYP1 ]** or **[ tYP2 ]** (only on newer models of DME) Otherwise no function | | |

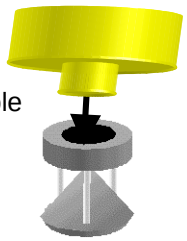
## Transponder T3

The transponder is an ultrasonic transmitter and receiver that corresponds with the DME. It can be used for measuring both in a pointed and 360-degree circle when used with the cone.
The transponder T3 has been equipped with an audible sound signal. The signal is used to determine if the transponder is activated. This signal can be turned off.
The DME instrument works as a remote control. The transponder unit and the audible sound signal is turned off and on with the measuring unit.

The transponder uses only one AA cell battery placed under the lid.

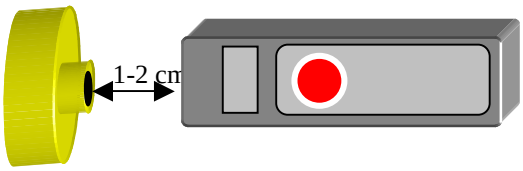



To measure in a 360 degree circle, it is necessary to use the cone. The ultrasonic signal is spread and will return in a circle. The cone can easily be assembled on the plot center staff provided by Haglöf Sweden AB. The transponder is assembled in the hole of the cone.



**How to us Transponder T3**

**Start the transponder**
To start the transponder, hold the loudspeaker of the measuring unit towards the transponder. Press the distance measuring button of the measuring unit until 2 short beep signals are heard from the transponder




**Turn off transponder**
To turn off the transponder, hold the loud speaker towards the transponder. Press the distance measuring button until 4 short beep signals are heard.
**Turn off and on the audible signal**
To turn off and on the audible signal of the transponder, hold the loud speaker of the measuring unit towards the transponder. Press the distance measuring button until the signal stops or starts. This will take approximately 10-15 seconds.

**Calibration**
1. Measure a distance of 10 meters between the transponder and the front of the instrument.
2. Look in the display and press quickly the red button until function F9 is shown. The display should now show 10 me and the calibration is performed. The instrument will only approve if the interval is within 9.6 - 10. 4 meter.

**Important**
When calibrating the DME, it is of utmost importance that the instrument is given enough time to set current temperature in measuring area (function F7). If the instrument is carried in a pocket, it can take up to 10 minutes before the DME can adjust to current outside temperature. The error for temperature is approximately 2cm/C°. 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.

Knowing this, it is also evident that if the instrument is calibrated without having set the correct temperature, the measuring inaccuracy will be made permanent when calibrating the instrument.

Distance Measuring with 2 measuring units
Convenient when two users need to know the exact distance between one another. Use function F3 and the text trP is shown in the display. Reset the instrument with one press.

**To think about**
The DME is designed for outdoor use. Both the measuring unit and the transponder are protected against water. The most sensitive parts of the instruments are the ultrasonic transmitters. A special shield covers these transmitters, to make sure that moisture, dirt or dust do not get inside this cover, whereas resolution and accuracy can be dramatically lowered.
Never leave the transponder upside down in rain or snow, since this may cause water to reach the openings for the ultra sonic transmitters. If this has occurred, let the transponder dry.
When changing the battery in the transponder, apply some vaseline on the O-ring sealing on the lock.
Always use 9V alcaline batteries. The transponder battery should be replaced when normal resolution is not reached.

**Distance Measuring**
Start and place the transponder on the place to which you need to know the distance. When the transponder is not in use, turn the transponder off.

To obtain a correct distance, direct the measuring instrument toward the transponder and press the red button one time. 4 lines **[ - - - - ]** will show in the display. After a few seconds the distance will appear in the display.

If the measuring instrument does not obtain any answering signals from the transponder, the 4 **[ - - - - ]** in the display will appear and no distance will be featured. Please check if the transponder is set, that batteries are working or if other errors may have occurred.
If the red button is kept pressed down, and you slowly move backwards, the instrument will measure the increased (or decreased if moving forward) continuously.

**Prism choose**
To use your DME 201 as a prism choose your prism factor [F4] by pressing the orange button four times. Once your prism factor is selected you may choose DBH Measuring at [F2] by pressing the orange button two times. Now when you take a reading the number displayed is the minimum diameter that a tree can be to be counted based on the prism factor and the distance to plot center.

The advantage of using your DME as a prism instread of your standard prism is that now you can utilize a point cruise even through thick vegetations. It also allows you to work your plot from the outside in instead of alway from plot center out, saving you time and allowing you to take accurate diameter measurments.

# Technical Details

| ***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 alcaline |
| **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 |

| ***Technical Details Transponder T3*** | |
|---|---|
| **Size:** | Diameter 7.0cm, 2.8 Inch |
| **Weight:** | 85 g (Incl. Battery) |
| **Battery:** | 1 1,5V AA alcaline |
| **Current:** | 1.0 mA |