

en/CalibrateCompass

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1 Calibrate Compass

The compass (and the GPS) is needed for the automated control of the MikroKopter. Therefore a new compass must be calibrated once for a proper function.

If the compass has not been calibrated, compass and GPS supported features can not be used and you can not start the copter.

An error message (error 31) is then displayed via the telemetry.

A recalibration of the compass is usually only necessary when the Kopter fly under the "[PositionHold](#)" function in circles at a remote location.

The calibration

Please note

Calibrate the copter outside, far away from magnetic influences!

During the calibration you have to turn the copter completely around the axis.


The following applies: If you calibrate the compass precisely, the copter will fly perfectly.




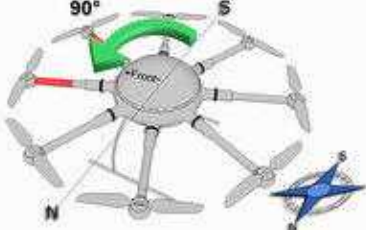



If the copter is flying in circles (with activated function PositionHold and in an altitude above houses and trees), you better calibrate the compass new.



When you have problems after the calibration (e.g. an err22), a magnetic problem on your copter can be the problem.

Informations for the "magnetic error" can be found here: [MagnetError](#)

The calibration will be done in 5 steps:

Step	Funktion	Beispielansicht / Funktion
Switch ON the Transmitter and connect the Copter with the Lipo.		

<p>Step 1 Initiate compass calibration</p>	<p>Nick down (and hold)</p> <p>then</p> <p>Throttle up + Yaw left</p> <p>(The Kopter beeps 1x)</p>	
<p>Step 2 Start Calibration</p>	<p>Pull Nick down 1x</p> <p>(The Kopter beeps 2x and the clicking starts)</p>	
<p>Calibration of the X-Axis (Nick-Axis)</p>	<p>The Kopter with the front (Arrow direction of the FlightCtrl) pointing to the South or North,</p> <p>then</p> <p>rotate the Kopter a couple times completely over the Nick-Axis until the buzzer stops with the clicking.</p>	
<p>Rotate the Kopter</p>	<p>Rotate the Kopter by 90°.</p> <p>The clicking starts again.</p>	
<p>Calibration of the Y-Axis (Roll-Axis)</p>	<p>Rotate the Kopter a couple times completely over the Roll-Axis until the buzzer stops with the clicking.</p>	
<p>Step 3 Finish the calibration of the X and Y-Axis</p>	<p>Pull Nick 1x down</p> <p>(The Kopter beeps 3x)</p>	
<p>Step 4 Start calibration of the Z-Axis (Yaw-Axis)</p>	<p>Pull Nick 1x down</p> <p>(The Kopter beeps 4x and the clicking starts)</p>	

<p>Calibration of the Z-Axis</p>	<p>INFO: Here it doesn't matter if the Kopter shows with the X or Y-Axis towards South (North).</p> <p>Rotate the Kopter a few times completely over the Roll- or Nick-Axis until the buzzer stops with the clicking.</p>	
<p>Step 5 Finish the calibration of the Z-Axis.</p>	<p>Pull Nick 1x down</p> <p>The Kopter confirms it with 2 beeps</p>	

Now that the Kopter "beeped" 2x after a successful calibration that part is done.

2 Videos

3 Check the calibration

You can now check the calibration of the compass in the KopterTool or also with a suitable transmitter.

Please do this also outside, far away from magnetic influences!

Here you have to check two values:

- MAG (or Field) = This should be around 100%
- Inclination (Incl) = This should be nearly the same value as the one in brackets

IMPORTANT:

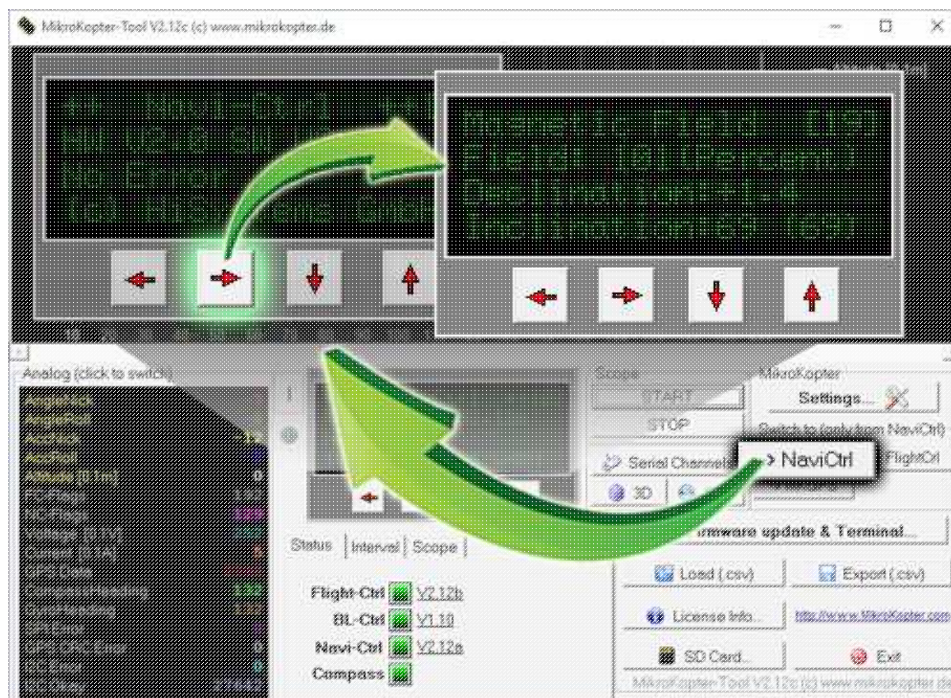
To see the right values you have to calibrate the Gyros first (throttle up + yaw left).

Without calibration you will still see 100% and no Inclination.

Check via [KopterTool](#)

Here you use:

- a MK_USB or a wireless connection between Copter and Computer
+
- you have calibrate the Gyros (throttle up + yaw left).



In the main window of the KopterTool click the button [NaviCtrl].

Under the virtual display click the red arrow (left or right) until the window "Magnetic Field" displayed.

The value for "Field" must be around 100% and the value for Inclination around the value you see in brackets.
(If the value for "Field" (or for "Inclination") is ~10%-15% higher/lower then 100%, recalibrate the compass)

Check via [HoTT transmitter](#)

- To see the right values of the calibration you have to calibrate the Gyros again (throttle up + yaw left). Now you can check the magnetic value in the lower display of the Graupner HoTT transmitter.

How to open it:

- ◆ With the right "four-way button" select the middle button **SET** to open the Menu
 - ◆ Go down to **Telemetry** and press **SET**
 - ◆ In the telemetry window choose **setting & data view** and press **SET**
 - ◆ In the next menu press the **right** button until you see the "Text-telemetry"
 - ◆ To change the view of "0m/s" to "MAG" press **SET** again.
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- The value for "MAG" must be around 100% and the value for Inclination (incl) around the value you see in brackets.
If the value for "Field" (or for "Inclination") is ~10%-15% higher/lower then 100%, recalibrate the compass!

