

# Magnetic Compass Compensation

## Setup:

1. Set the aircraft outside of the Hangar.
2. The magnetic compass must be checked for accuracy in a location free of steel structures, underground pipes or cables, or equipment that produces magnetic fields.
3. A Compass swing can be done using different Magnetic Heading references: A Magnetic Master Compass used by a mechanic outside of the Aircraft to align the aircraft, a Heading reference in the aircraft (IRS System) or a compass swing rose installed by the airport. Whichever method is used, the following procedure will be suitable.

## 1 Find the Initial Deviation Values

1. Set the aircraft to a North Heading
2. Record Compass Deviation from North direction (DN)
3. Set the aircraft to a East Heading
4. Record Compass Deviation from East direction (DE)
5. Set the aircraft to a South Heading
6. Record Compass Deviation from South direction (DS)
7. Set the aircraft to a West Heading
8. Record Compass Deviation from West direction (DW)

Note: The deviation values shall be counted as + or – relative to the reference direction (e.g. Compass shows 358 when A/C is in north direction: DN=-2)

## 2 Calculate the Coefficients

1. According to the following formulas calculate the following 3 coefficients:.

$$A = \frac{DN+DW+DS+DE}{4} \qquad B = \frac{DE-DW}{2} \qquad C = \frac{DN-DS}{2}$$

## 3 Correction of A-Error

1. Set the aircraft to any Heading.
2. The A-Error is the Mounting error of the compass. To correct it loosen the mounting screws and turn according to the inverse value of the Error (E.g. if the A Error is -2 then correct the installation 2 degrees to the left)
3. Tighten mounting screws again
4. Check that Heading indication is corrected by exact the value of the A Error

## 4 B Error Correction

1. Set the aircraft to Heading East
2. Find the B Error compensation screw (may also be labeled E-W)
3. Correct the displayed Heading for the inverse value of the B Error (eg if the B error is -2 then turn the compensating screw to correct the Heading to +2 degrees)

## 4 C Error Correction

1. Set the aircraft to Heading North
2. Find the C Error compensation screw (may also be labeled N-S)
3. Correct the displayed Heading for the inverse value of the C Error

## 5 Residual Deviation swing

1. Set the aircraft to Heading North
2. Record the value of the deviation.
3. Set the aircraft to Heading 030
4. Record the value of the deviation
5. Repeat the Steps 3-4 for every 30 degrees up to HDG 330

## 6 Make a new Compass compensation card

1. Enter the deviation values in a compass compensation card.
2. Enter the date and the performing organization on the compensation card
3. Put the compensation card onboard of the aircraft, near the compass and clearly visible
4. Sign out the Compass Compensation i.a.w. LTH 40 in the aircraft technical Log book