
# E-Magnets UK Ltd

## A dedicated and specialist supplier of Magnets

**Mission Statement –**
**"Through operational excellence, we will provide our customers with a superior service experience and the highest quality magnet components and assemblies."**

## Identifying the Direction of Magnetisation and Pole face locations in our Magnets

Every magnetised permanent magnet has a Direction of Magnetisation, DoM. For most magnets (Alnico, Ferrite, NdFeB and SmCo) there is only one direction of magnetisation (i.e. there is only a single North and a single South pole) with a simple pole pattern. In magnets such as the flexible magnets, there can be multiple poles with a complex pole pattern existing.

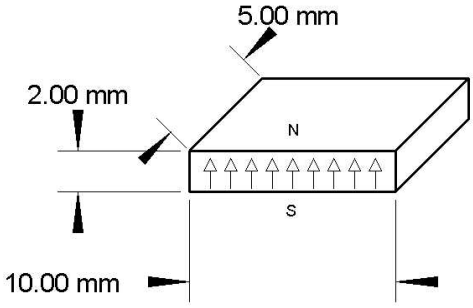
The definition of the North pole on a magnet is based around the location of the Geographic North Pole. The North pole face of a permanent magnet is a North seeking pole (it seeks the geographic North). By the definition of unlike poles attracting, the geographic North pole is actually a magnetic South pole. Although this may appear strange, it is factual. This is the correct terminology. More information on magnetic patterns can be found in "**Direction of Magnetisation and Magnet drawings – a simple overview**".

Wherever there is a North pole, there must also always be a South pole. There can never be only a North or only a South. Contrary to some information sources, + and - (positive and negative) poles do not exist. Where it is used, + is regarded as North and - is regarded as South.

The Direction of Magnetisation, DoM, is shown by an arrow (*Figure 1*). N◁—S *Figure 1:- DoM arrow.*

A letter "A" is often used to denote the dimension that the direction of magnetisation runs parallel with. The A usually means Alignment, although (shared/common) Axis is also used.

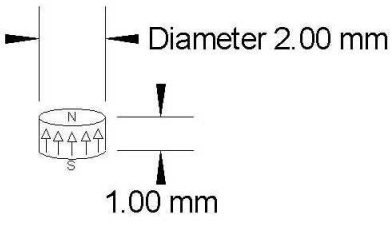
Below, in *Figure 2* and *Figure 3*, are shown two examples of the naming of the magnets to illustrate how the "A" is linked with the direction of magnetisation. From these two examples, the direction of magnetisation (and hence the location of the magnet poles) can be found. The E318 magnet is magnetised in the 2mm direction. The E303 is axially magnetised. A 5mmA diameter x 3mm disc would therefore be diametrically magnetised (across the diameter). And a 25mm diameter x 5mmA x 6mm diameter (E313) ring magnet would be axially magnetised.




E318 5mm x 10mm x 2mm**A** N42

**A** = dimension **A**ligned with the direction of magnetisation (shown by arrows). This magnet is magnetised / oriented in the 2mm direction. Therefore there is 2mm between the North and South pole faces.

*Figure 2:- E318 rectangular magnet 5mm x 10mm x 2mmA.*




E303 2mm dia x 1mm**A** N42

**A** = dimension **A**ligned with the direction of magnetisation (shown by arrows). This magnet is axially magnetised. Therefore there is 1mm between the North and South faces.

*Figure 3:- Axially magnetised disc magnet D2mm x 1mmA.*

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