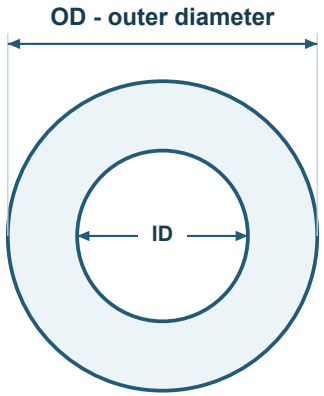
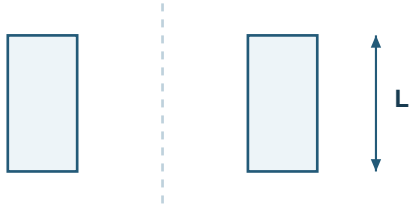
NdFeB Ring Magnets

Radial and continuous Halbach multipole configurations. Reference dimensions and design conditions; not an in-house test, batch report or supply guarantee.

Ring geometry



Top view: ID / OD is a dimensionless ratio



Axial section: L = axial length

Dimensional reference

Parameter	Radial ring	Continuous Halbach multipole ring
Outer diameter (OD)	20-150 mm Recommended OD < 70 mm	5-50 mm
Inner / outer diameter (ID / OD)	0.75-0.95	0.6-0.8
Axial length (L)	5-50 mm	5-50 mm

The recommendation OD < 70 mm is separate from the stated radial-ring range of 20-150 mm. It is retained as a recommendation, not converted into a mandatory maximum.

ID / OD describes the diameter ratio. These ranges do not define a tolerance, approved drawing, material grade, coating, air gap or operating-temperature limit.

Drawing confirmation

Confirm OD, ID, L, dimensional tolerances and the required magnetization pattern for each part. The neutral sketches above explain the dimensions only; they are independently drawn and are not product photographs.

Reference limits

Availability across a range depends on the selected geometry and process. No numeric dimensional tolerance or measured performance acceptance limit is stated in this reference. Use an agreed drawing and operating conditions for an engineering specification.

Magnetization Configurations

Configuration descriptions are retained as technical reference. The source waveform plots are excluded from this compilation; no measured field curve is represented here.

Reference item	Radial ring	Continuous Halbach multipole ring
Magnetization arrangements	Uniform radial arrangement (single-pole in source terminology); straight multipole or skewed multipole orientation.	Inner-circumference multipole or outer-circumference multipole arrangement.
Pole-count selection	Adjustable; determined by the magnetizing tooling.	Determined during pressing / forming.
Illustrated examples in the source	8 straight poles; 12 skewed poles.	10 outer-circumference poles.
Qualitative surface-flux label from the source	Medium	High

The pole counts above are examples, not a universal pole-count restriction. The qualitative labels "medium" and "high" have no stated test setup, sample identity or common measurement conditions; they are not measured acceptance values or a comparative performance guarantee.

Radial-ring engineering review topics
Dimensional accuracy and fit; rotor dynamic balance, vibration and running stability; assembly sequence; smaller air-gap designs and their effect on efficiency and power density; noise and motor reliability.

Multipole-ring engineering review topics
Magnetic-flux concentration and utilization; flux leakage; compact motor design and torque density; system performance, weight and cost; precision motion-control and motor applications.

These are design topics described in the source, not verified benefits for a selected part. Assessment requires the actual grade, geometry, magnetization pattern, magnetic circuit, air gap and operating conditions. No quantified efficiency, torque, vibration, noise or reliability improvement is specified here.