Problem info

Problem type: Magnetostatics
Geometry model class: Plane-Parallel
Problem database file names:

- Problem: *Magn5_a.pbm*
- Geometry: *Magn5.mod*
- Material Data: *Magn5_a.dms*
- Material Data 2 (library): *none*
- Electric circuit: *none*

Results taken from other problems:

- *Magnetic State: Magn5_base.pbm*

Geometry model

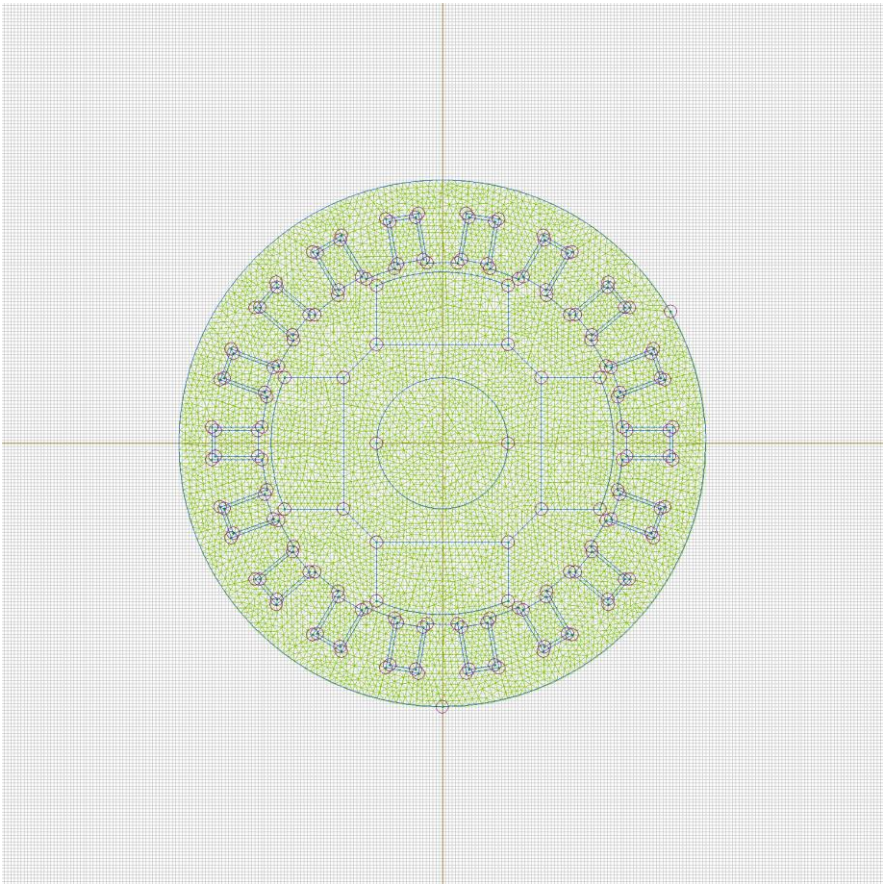


Table 1. Geometry model statistics

	With Label	Total
Blocks	14	26
Edges	1	168
Vertices	0	164

Number of nodes: 6271.

Labelled objects

There are following labelled objects in the geometry model (Material Data file could contain more labels, but only those labels that assigned to geometric objects are listed)

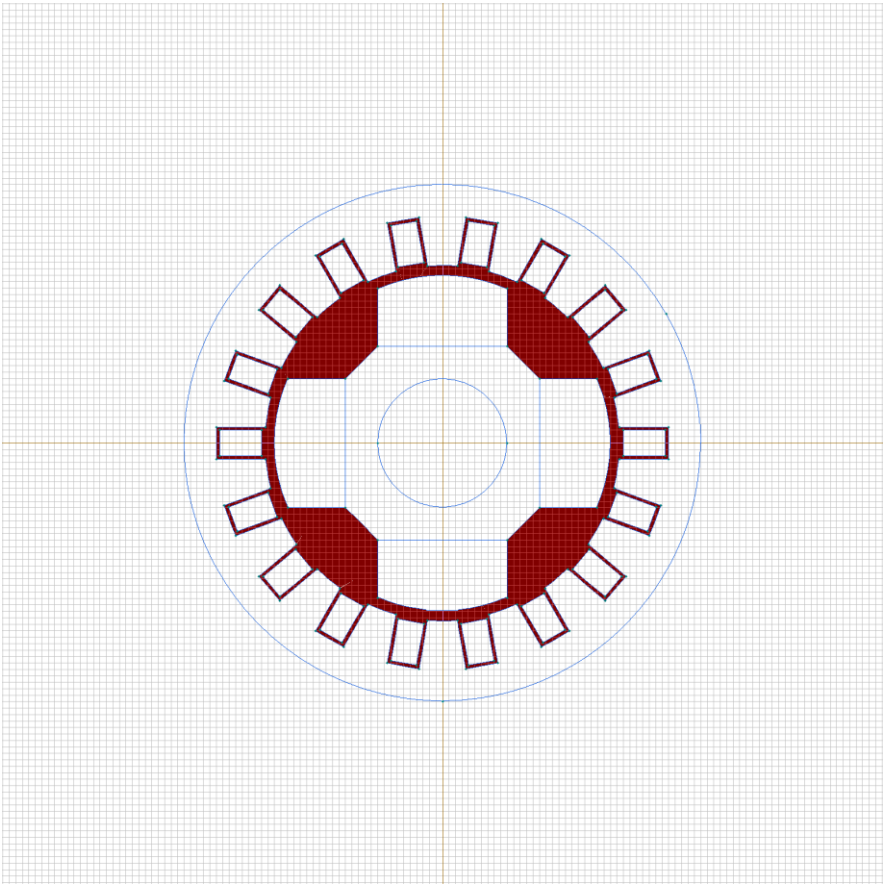
Blocks:	Edges:	Vertices:
• air • magnet E • y • a • c • rotor • stator • magnet N • magnet S • shaft • magnet W • x • z • b •	• surface •	

Detailed information about each label is listed below.

Labelled objects: block "air"

There are (1) objects with this label

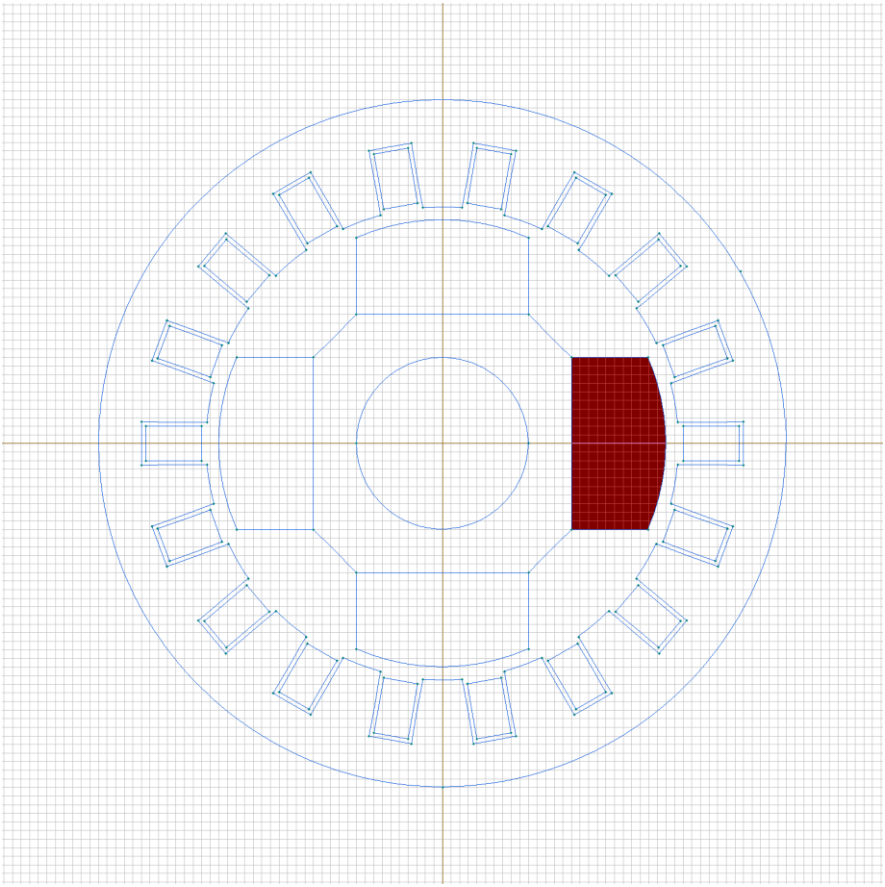
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "magnet E"

There are (1) objects with this label

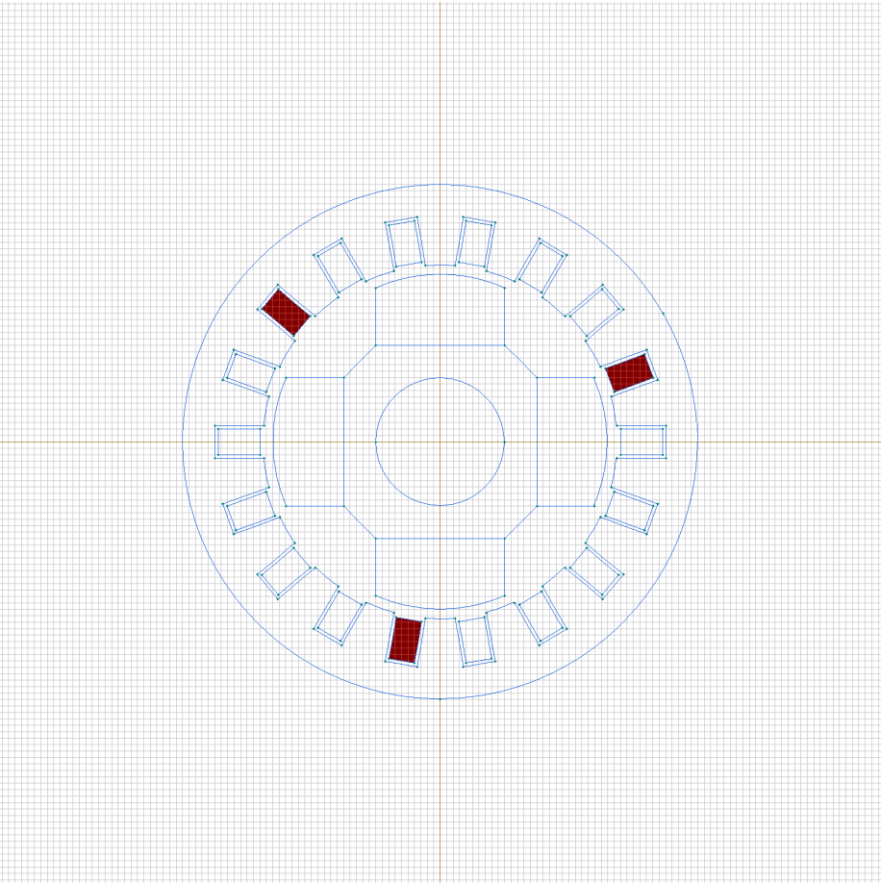
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "y"

There are (3) objects with this label

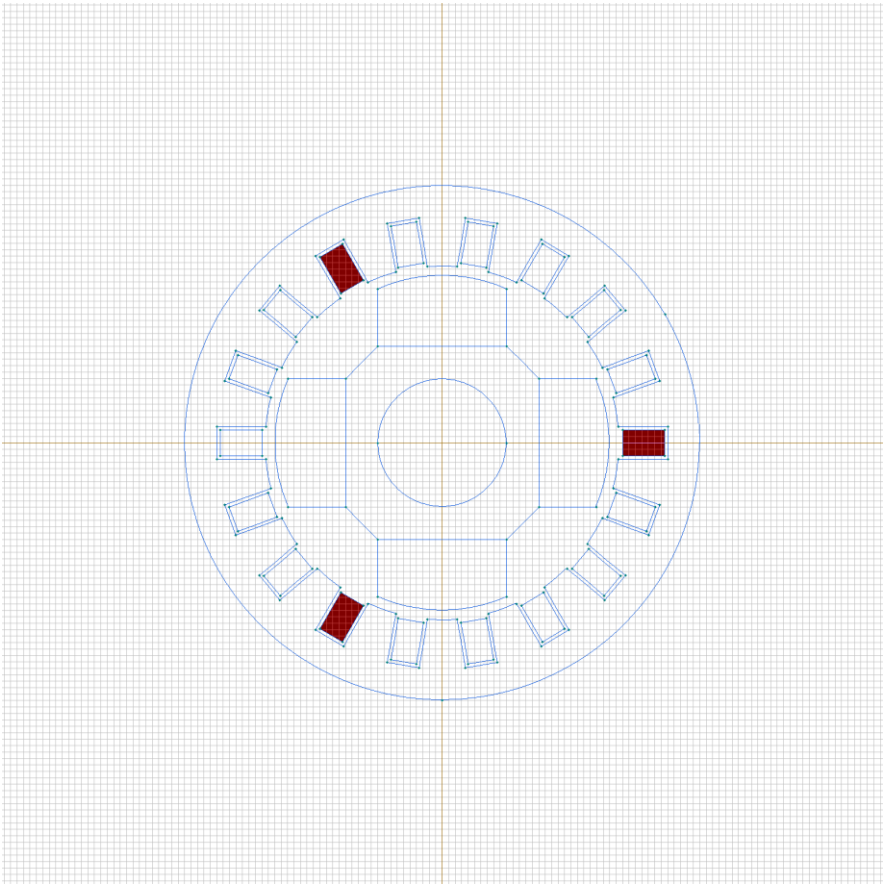
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "a"

There are (3) objects with this label

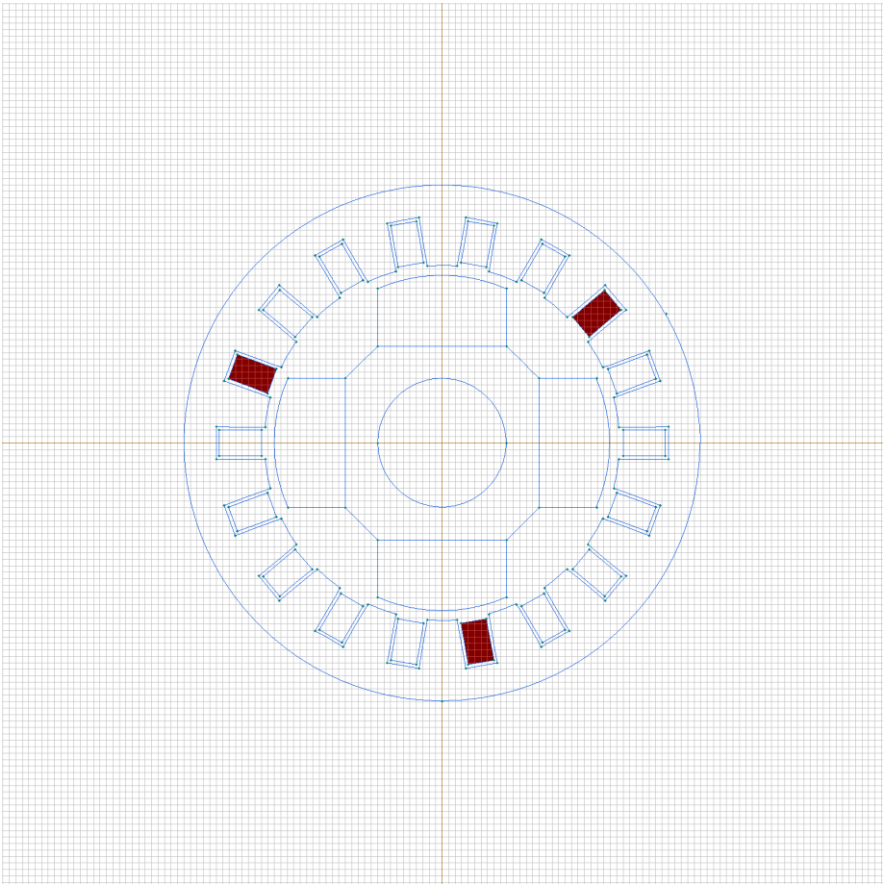
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=100000 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "c"

There are (3) objects with this label

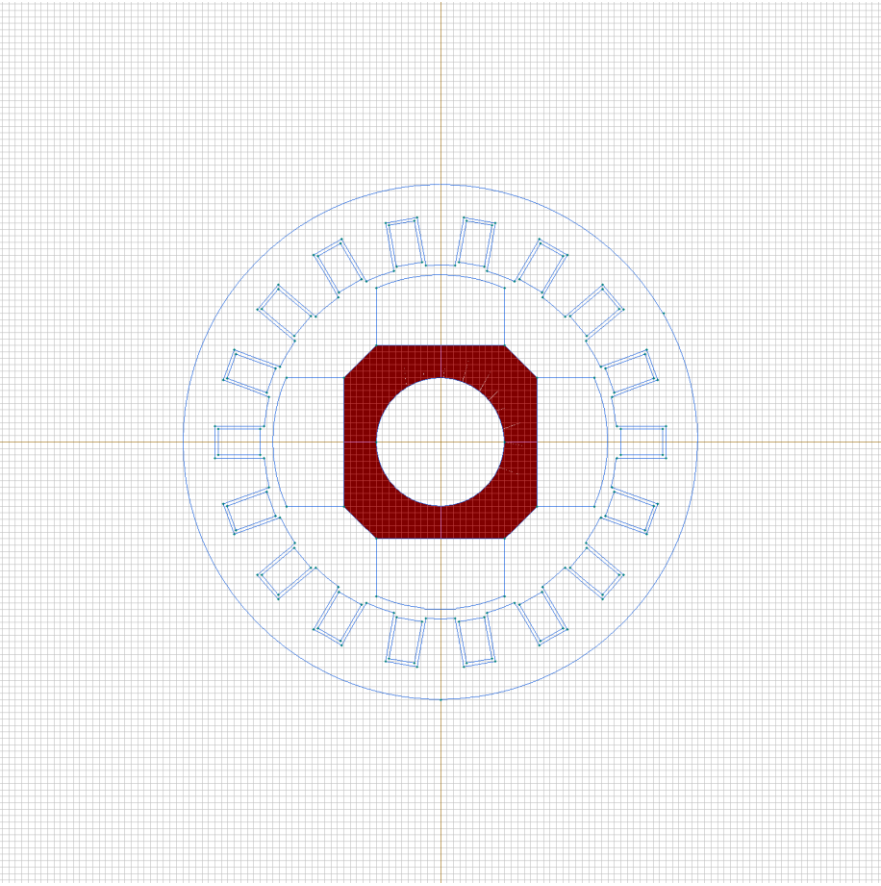
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "rotor"

There are (1) objects with this label

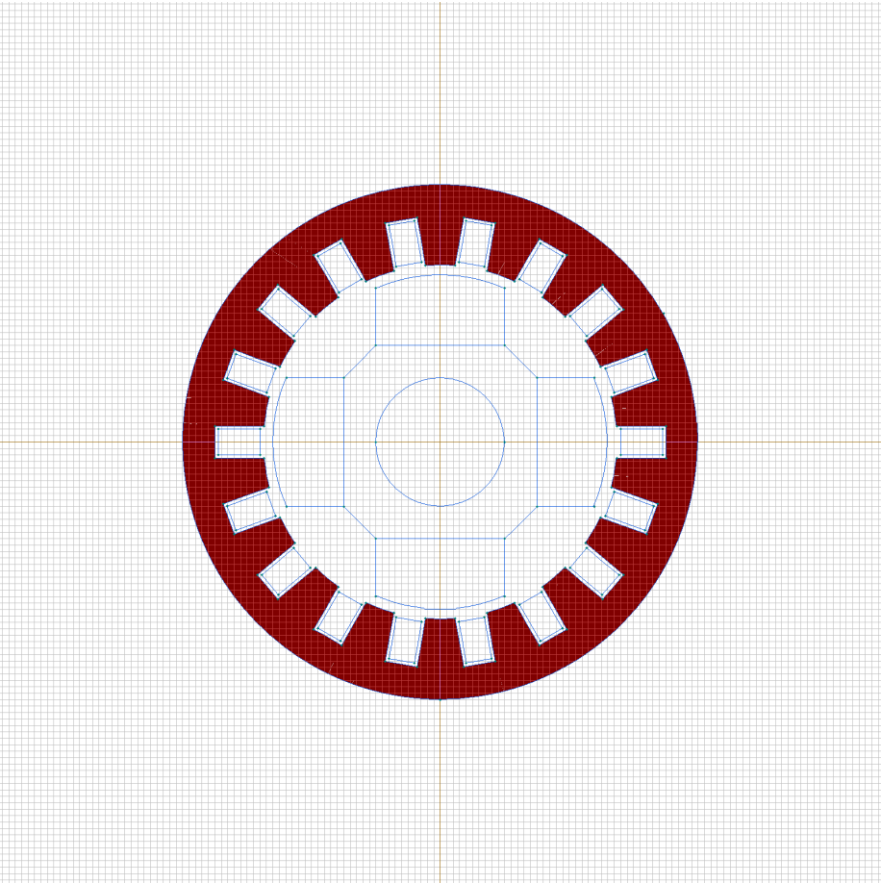
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "stator"

There are (1) objects with this label

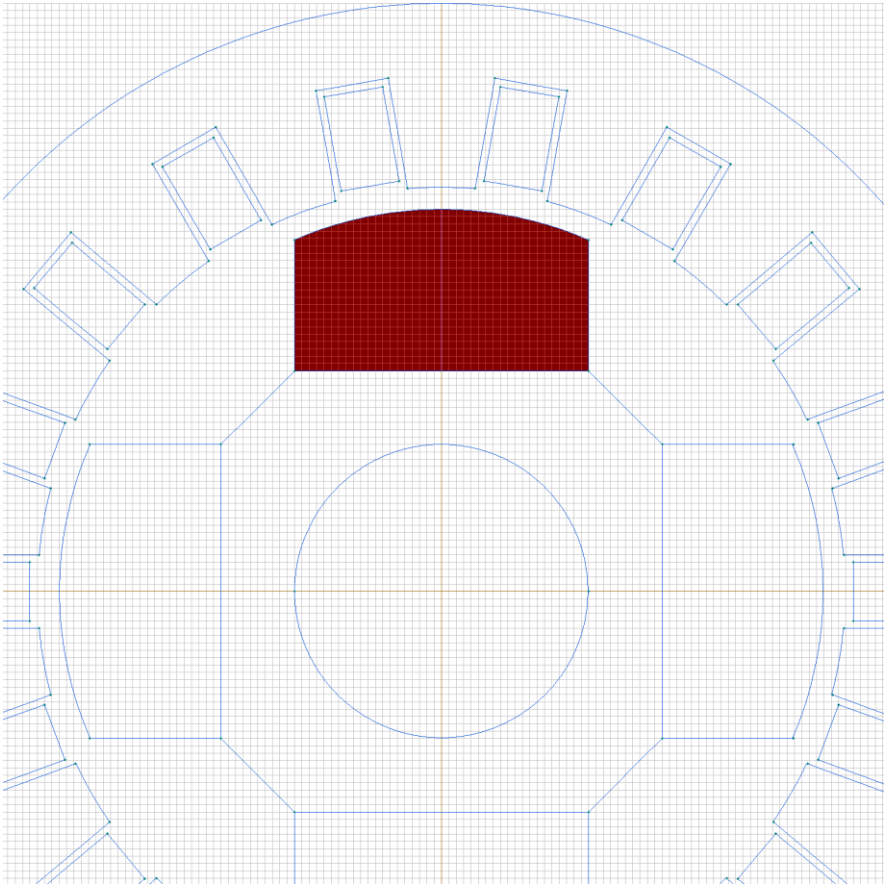
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "magnet N"

There are (1) objects with this label

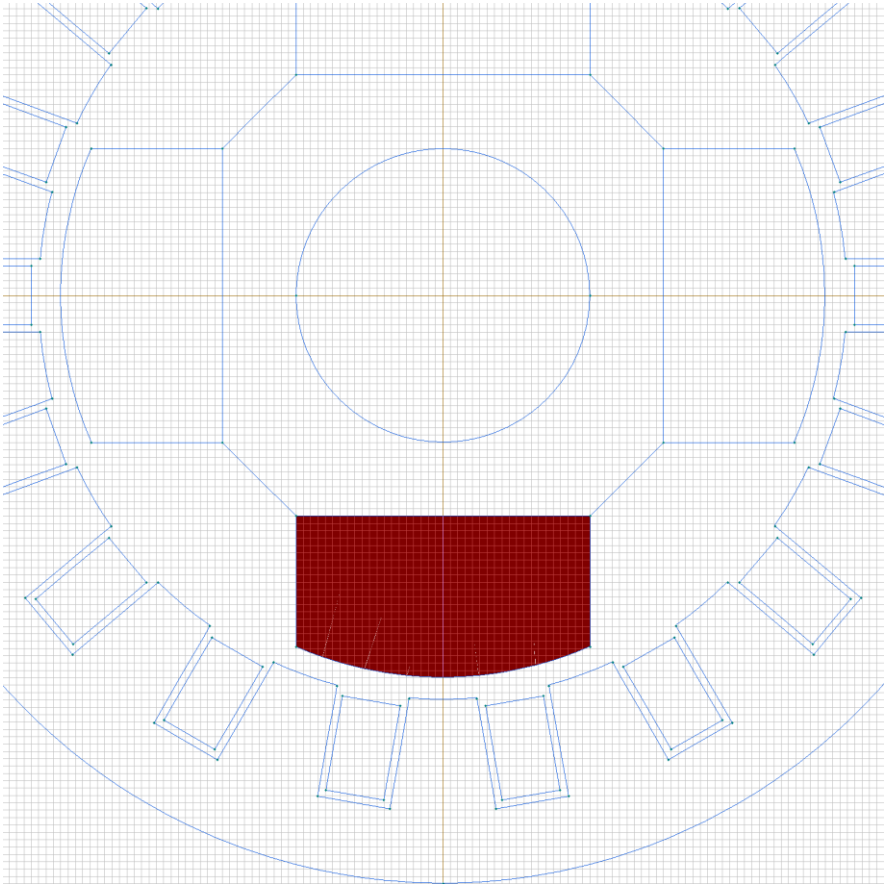
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "magnet S"

There are (1) objects with this label

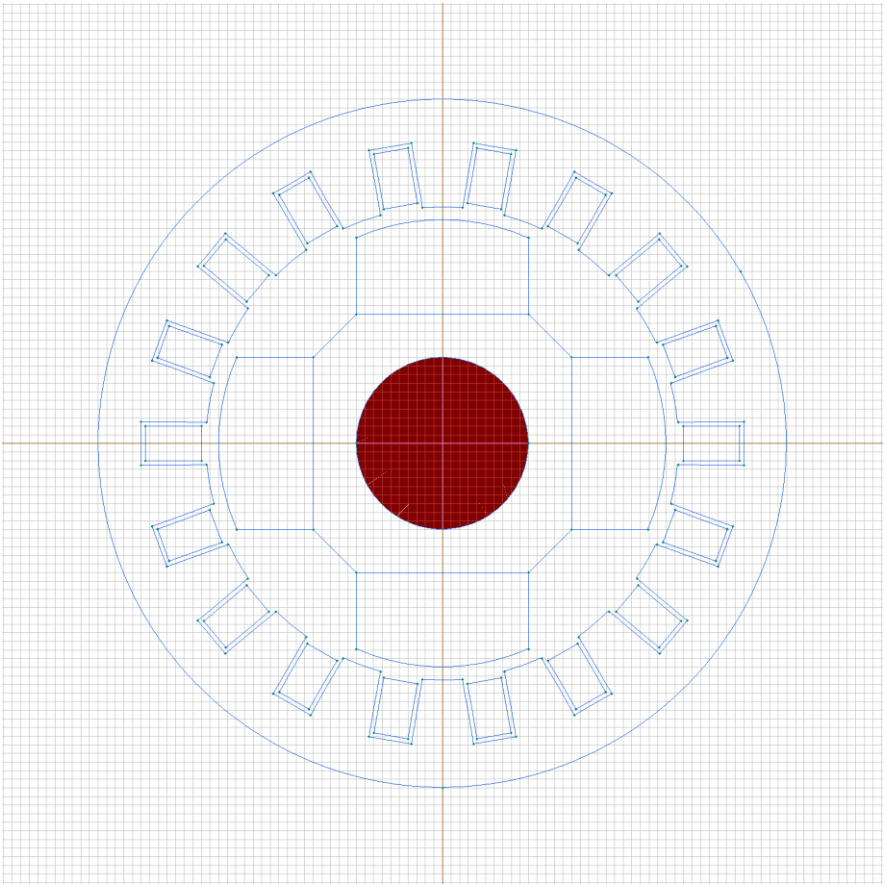
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "shaft"

There are (1) objects with this label

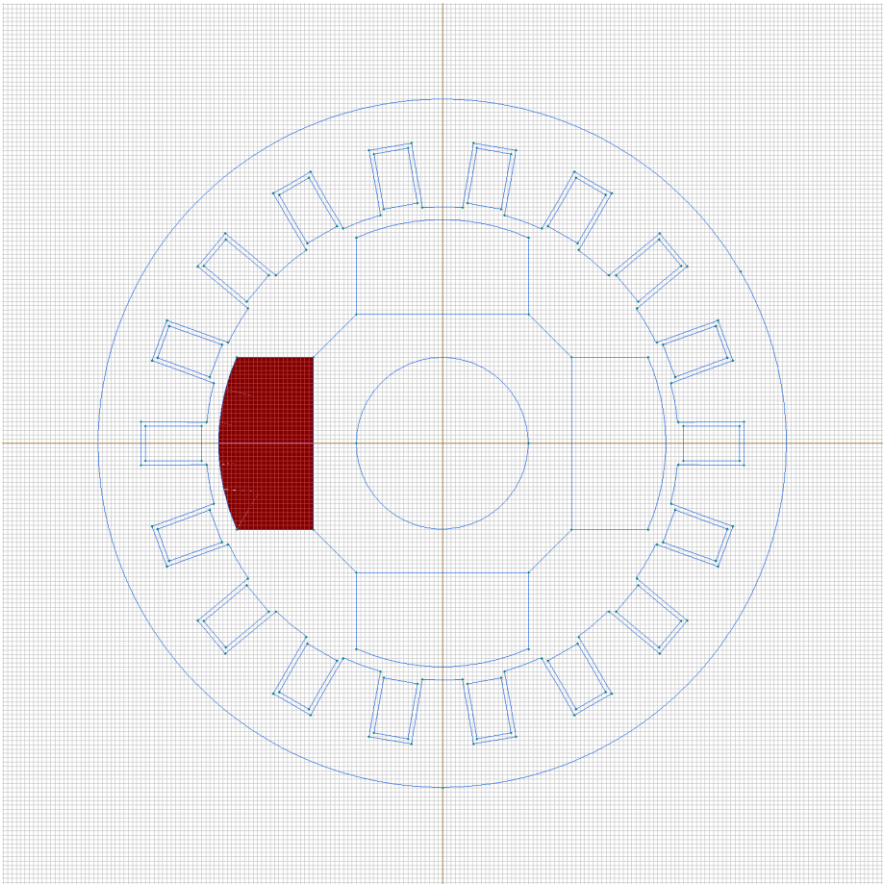
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "magnet W"

There are (1) objects with this label

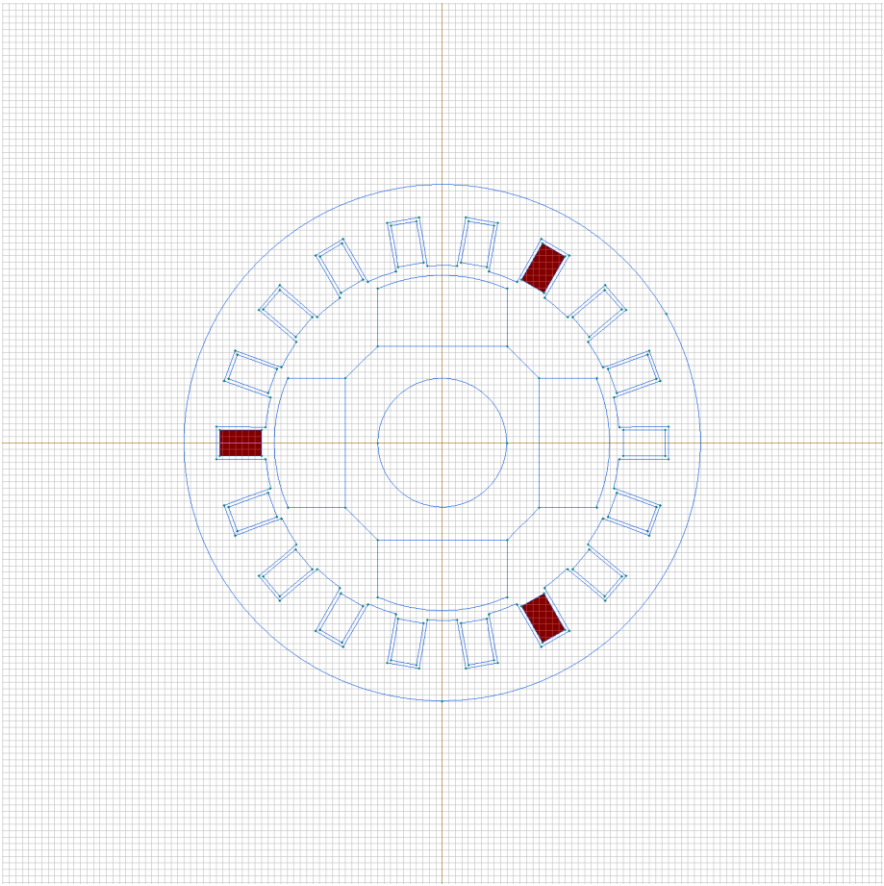
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "x"

There are (3) objects with this label

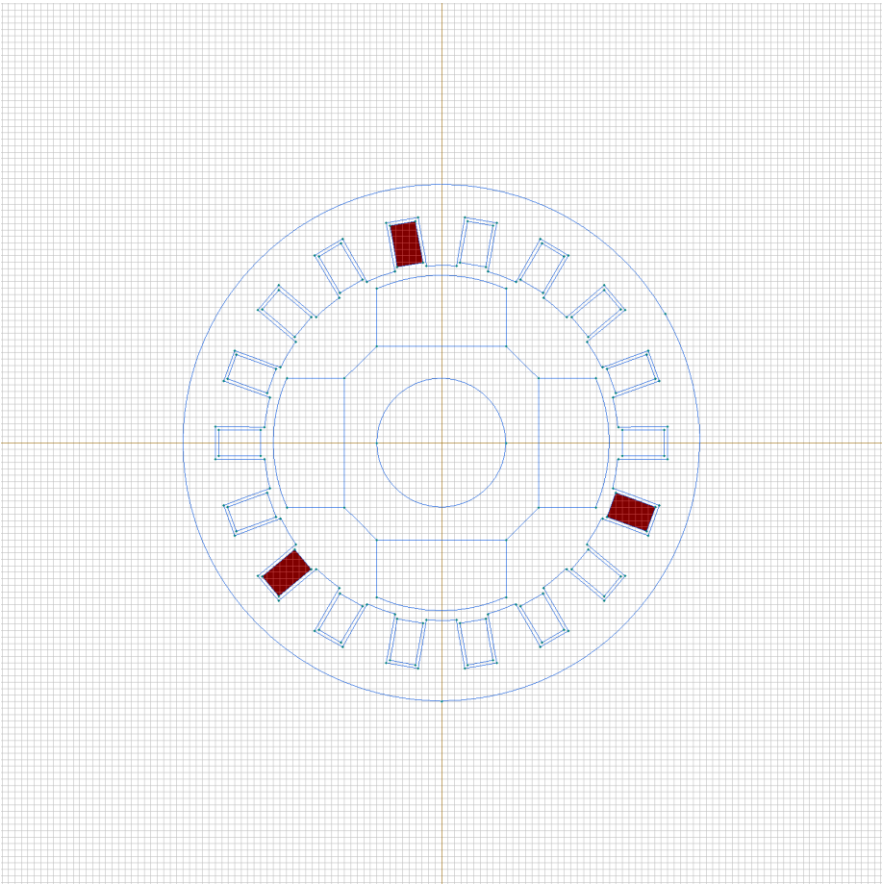
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=-100000 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "z"

There are (3) objects with this label

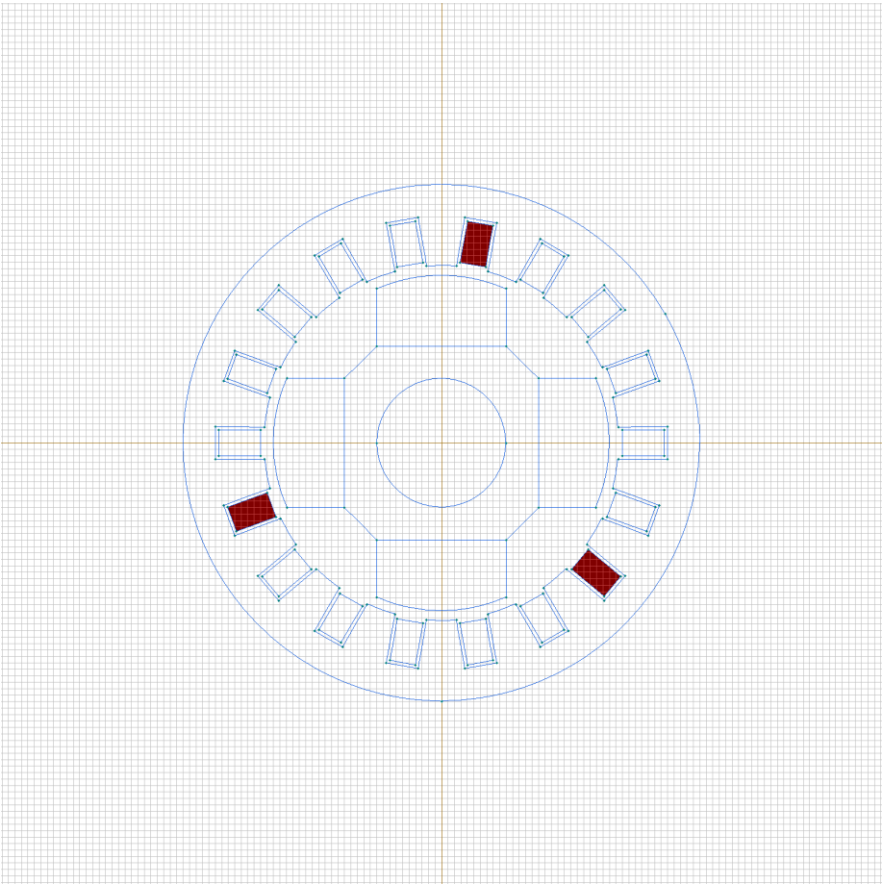
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "b"

There are (3) objects with this label

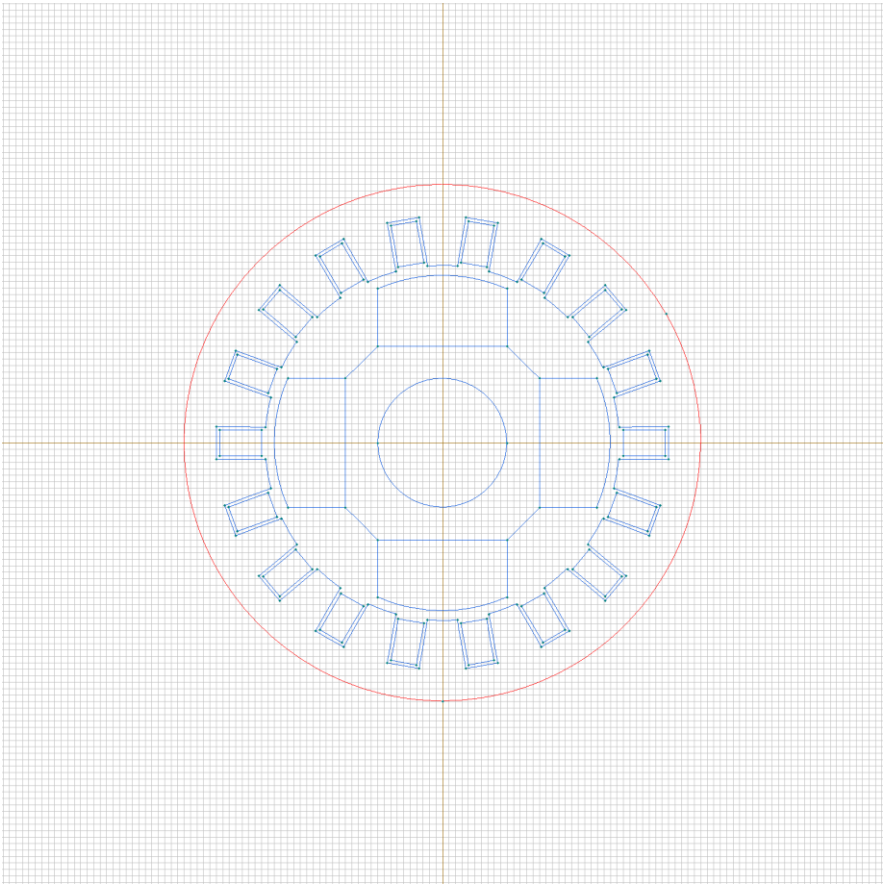
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: edge "surface"

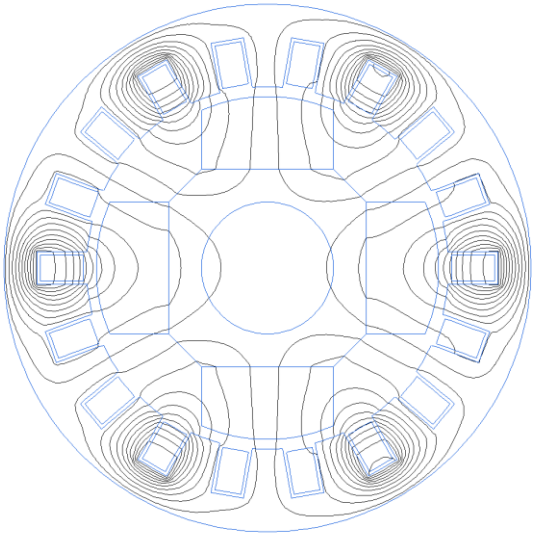
There are (2) objects with this label

Magnetic potential: A=0 [Wb/m]



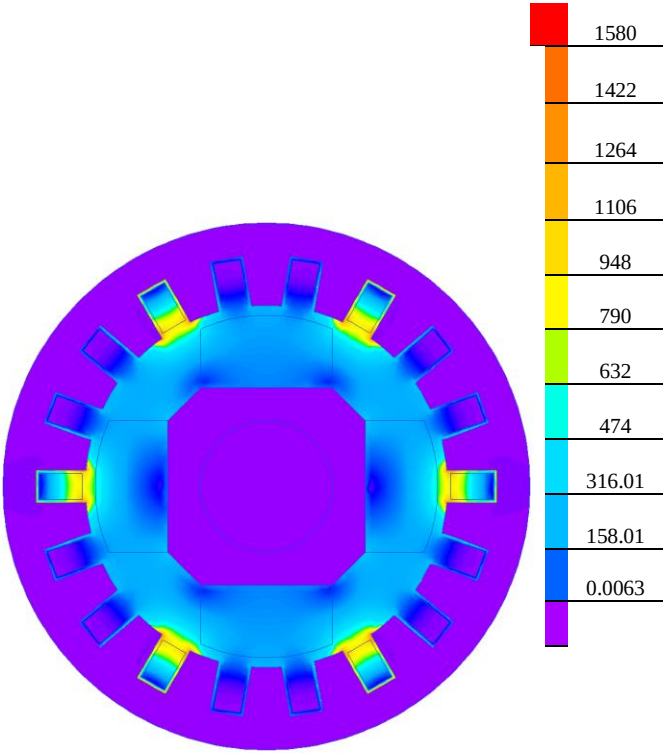
Results

Field lines



Results

Color map of Strength |H| [A/m]



Nonlinear dependencies

No non-linear dependencies are used in this problem data