Problem info

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

- Problem: *Motor-j1.pbm*
- Geometry: *Motor-j1.mod*
- Material Data: *Motor-j1.dms*
- Material Data 2 (library): *none*
- Electric circuit: *none*

Results taken from other problems:

- *none*

Geometry model

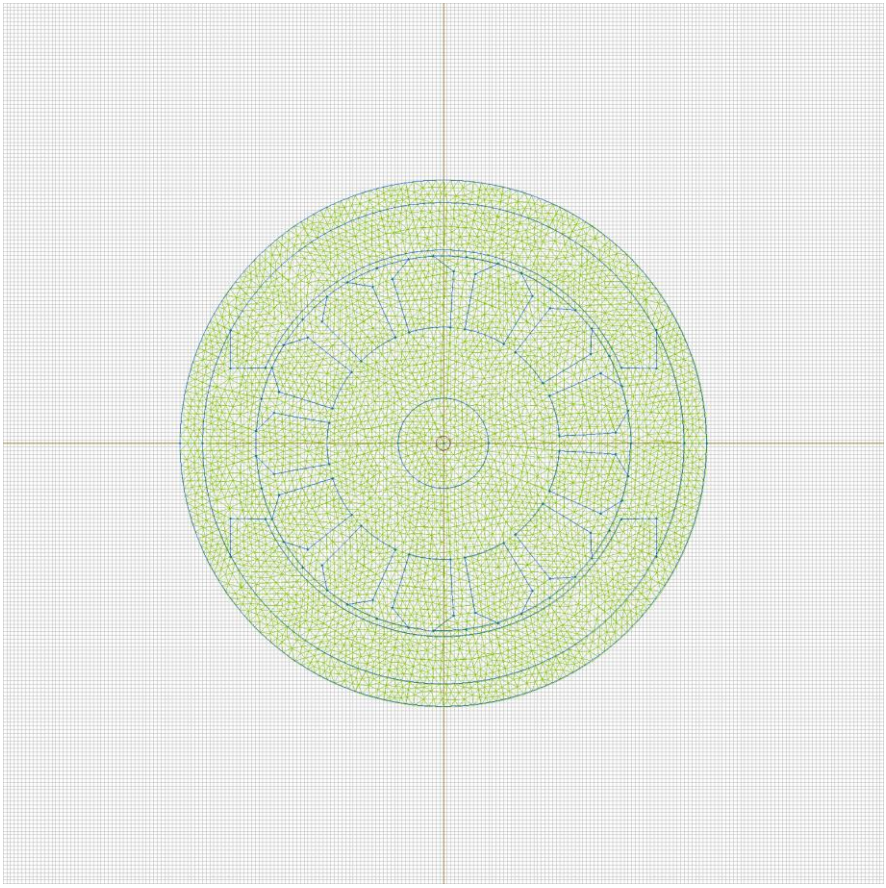


Table 1. Geometry model statistics

	With Label	Total
Blocks	8	19
Edges	1	124
Vertices	0	110

Number of nodes: 4283.

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)

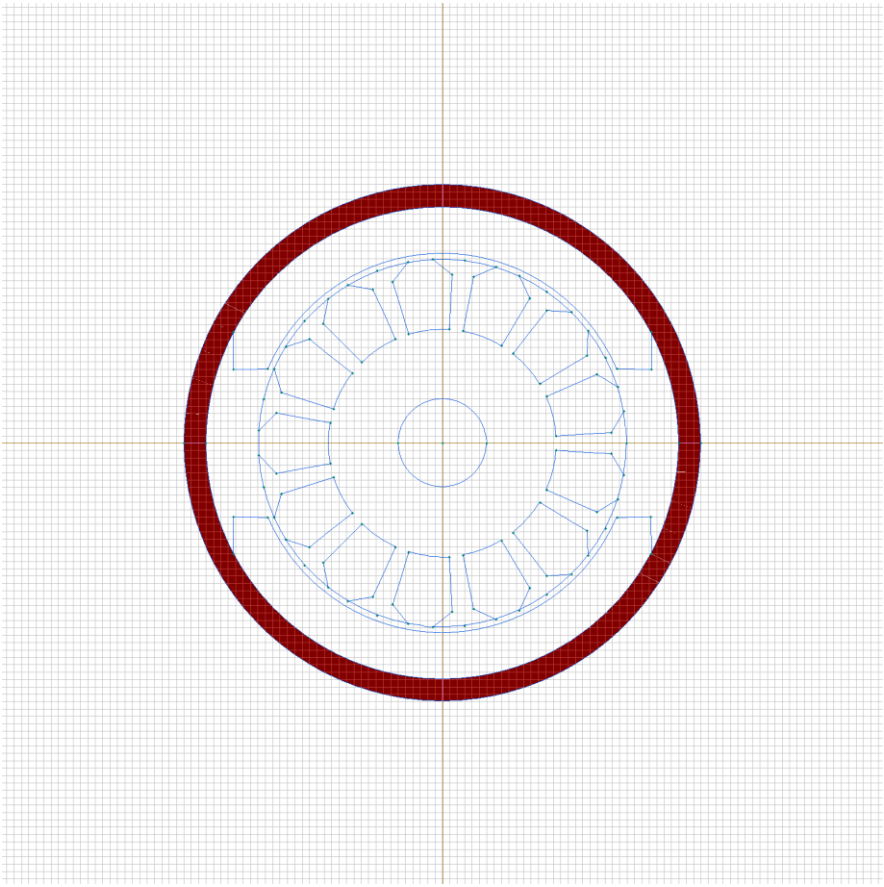
Blocks:	Edges:	Vertices:
• st3 • coil1 • ep20 • ferrite-top • coil2 • ferrite-bot • coil • air •	• A = 0 •	

Detailed information about each label is listed below.

Labelled objects: block "st3"

There are (1) objects with this label

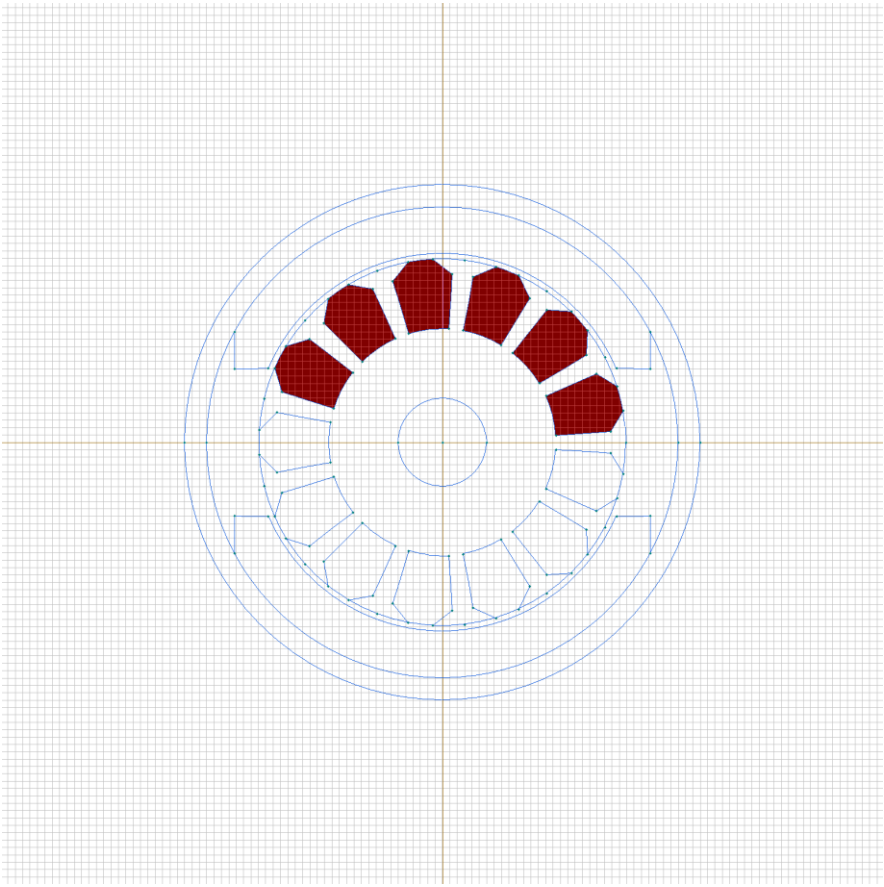
Relative magnetic permeability: mu=nonlinear (see Table 2 in the "Nonlinear dependencies" section)
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "coil1"

There are (6) objects with this label

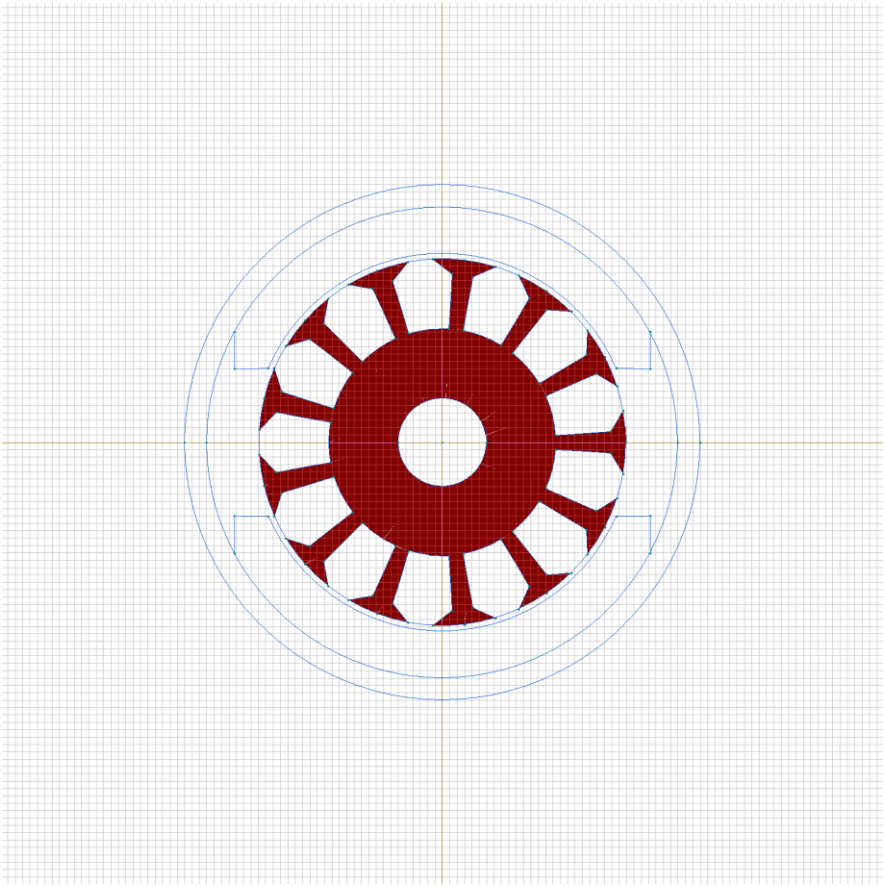
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=1000000 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "ep20"

There are (1) objects with this label

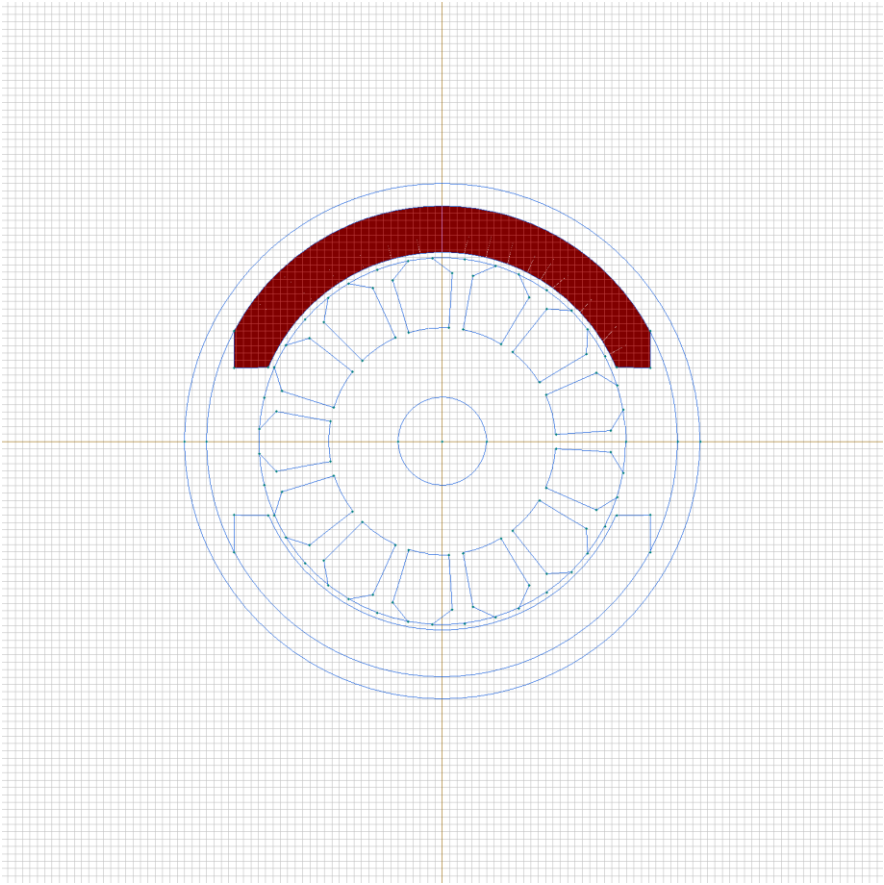
Relative magnetic permeability: mu=nonlinear (see Table 3 in the "Nonlinear dependencies" section)
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "ferrite-top"

There are (1) objects with this label

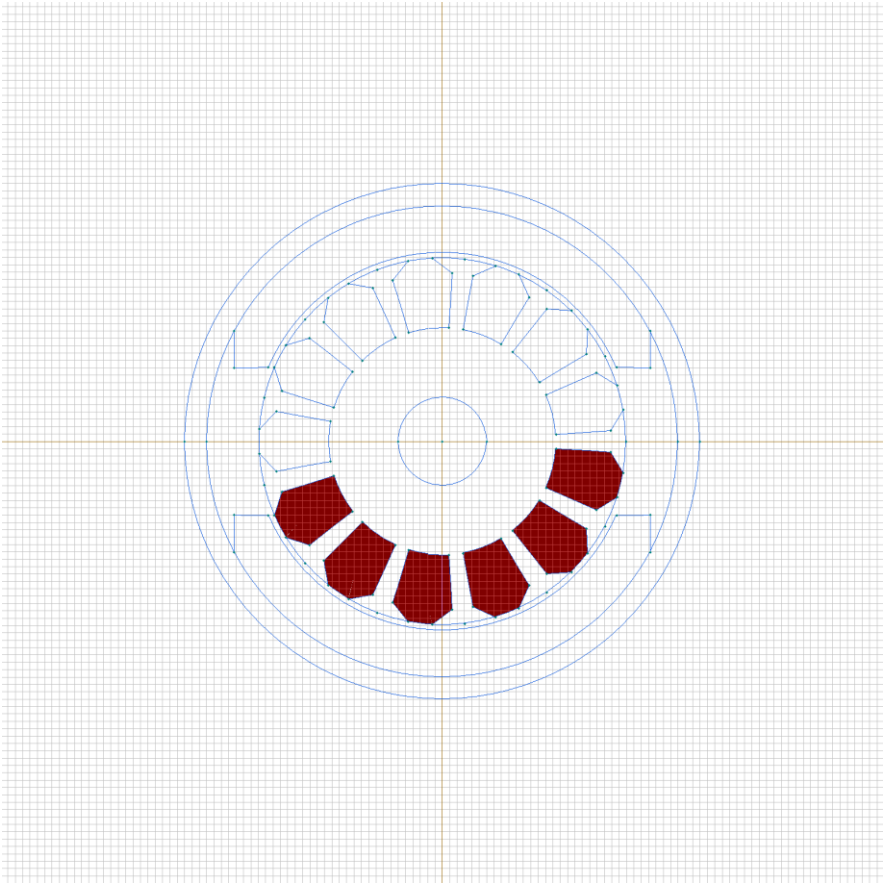
Relative magnetic permeability: mu=nonlinear (see Table 4 in the "Nonlinear dependencies" section)
Coercive force: Hc=242000 [A], direction: 0 [deg]
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "coil2"

There are (6) objects with this label

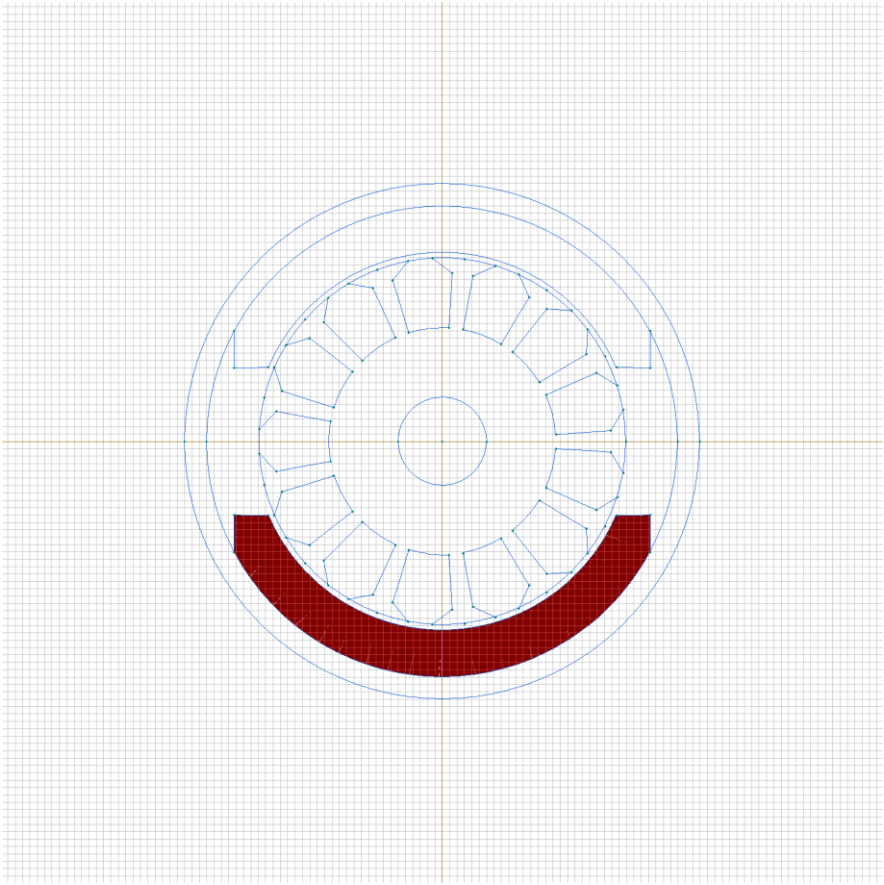
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=-1000000 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "ferrite-bot"

There are (1) objects with this label

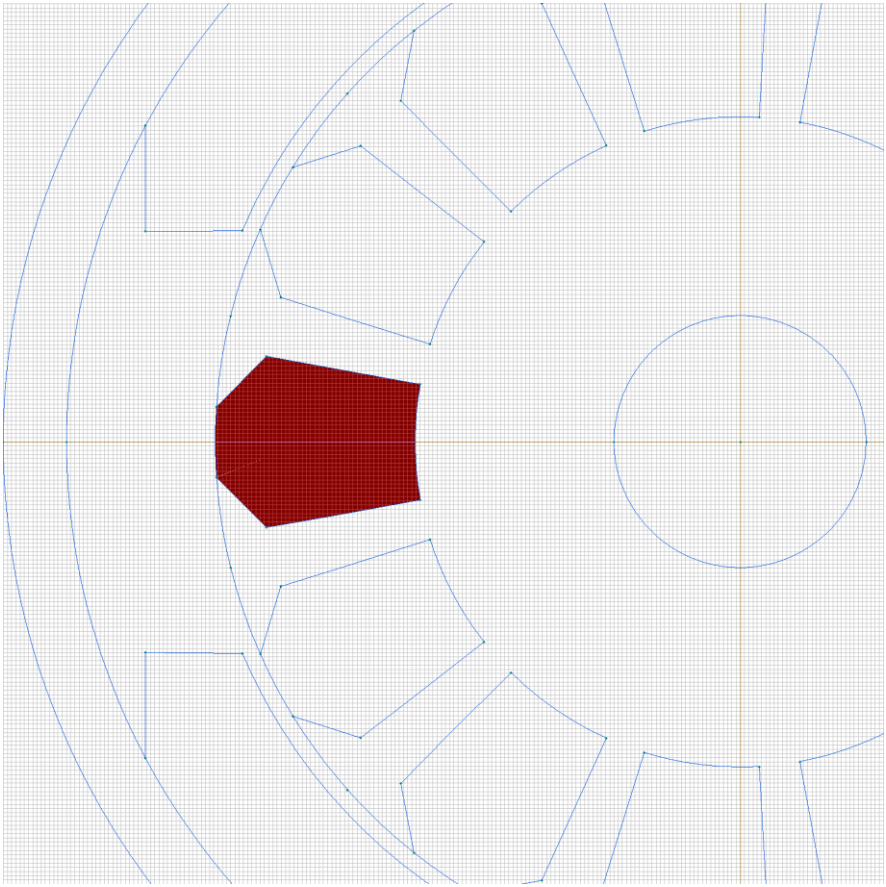
Relative magnetic permeability: mu=nonlinear (see Table 5 in the "Nonlinear dependencies" section)
Coercive force: Hc=242000 [A], direction: 180 [deg]
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "coil"

There are (1) objects with this label

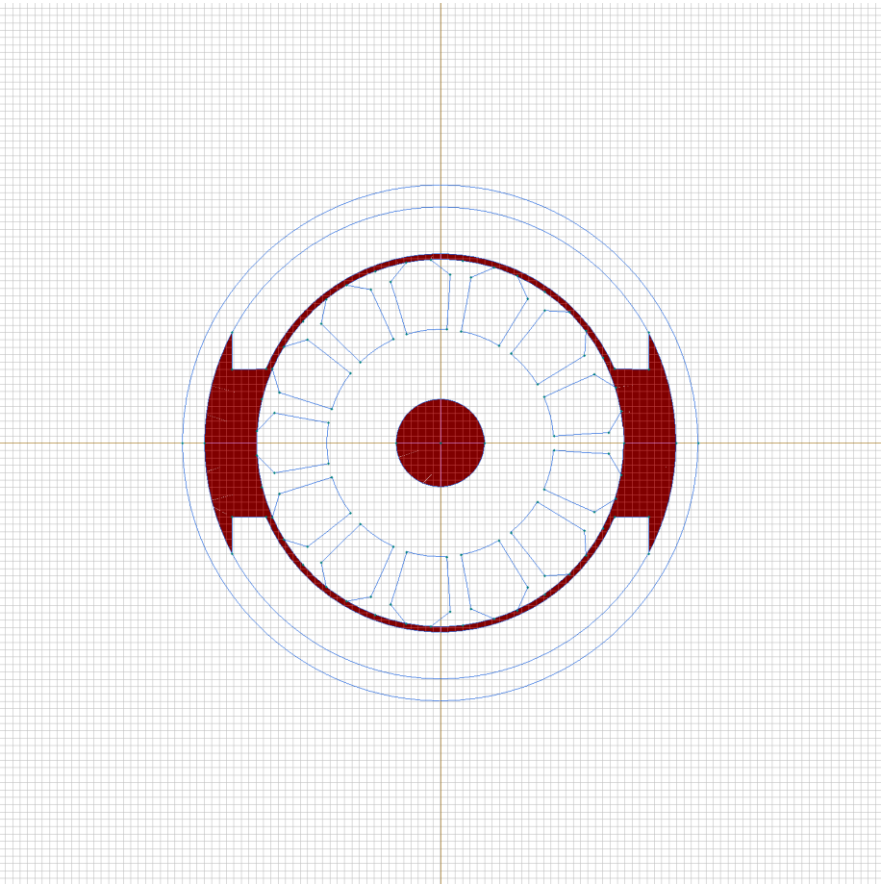
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "air"

There are (2) objects with this label

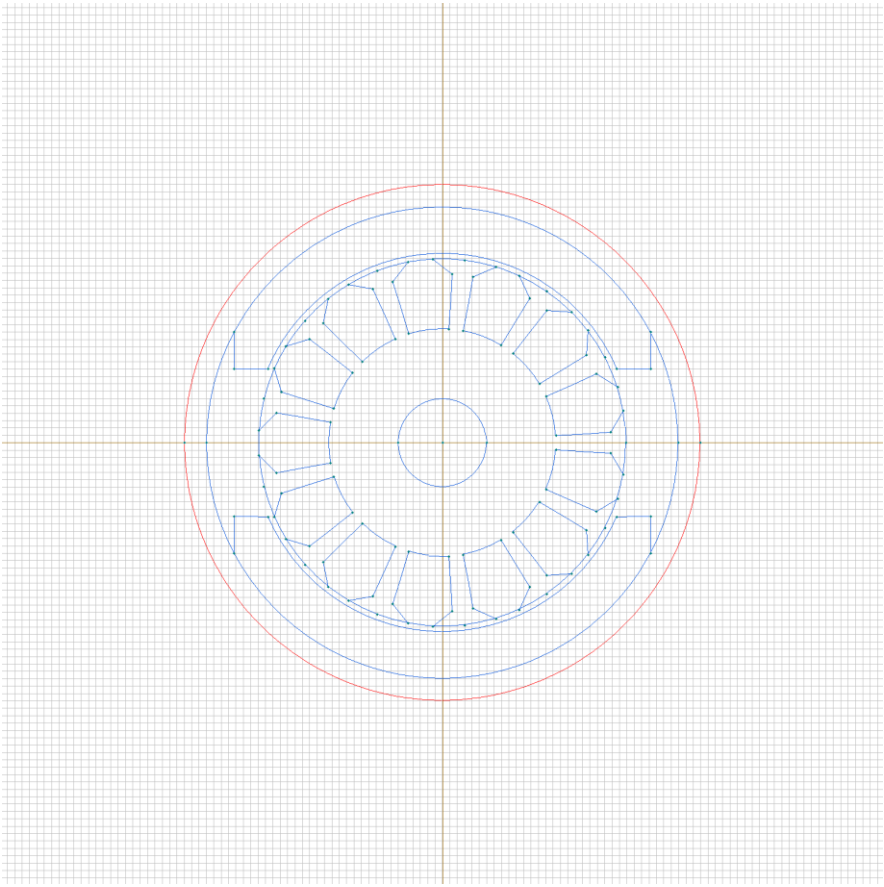
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: edge "A = 0"

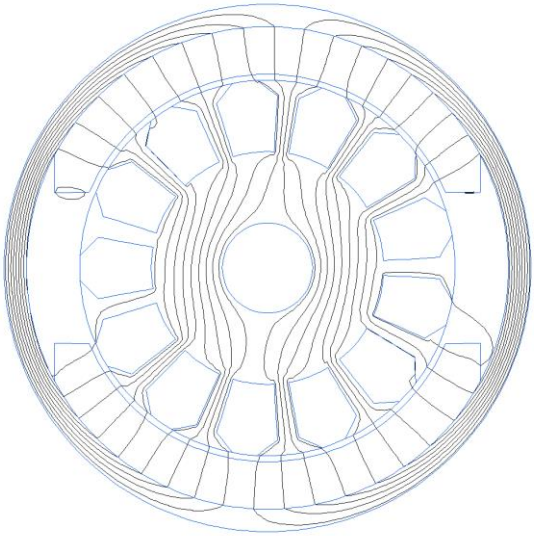
There are (2) objects with this label

Magnetic potential: A=0 [Wb/m]



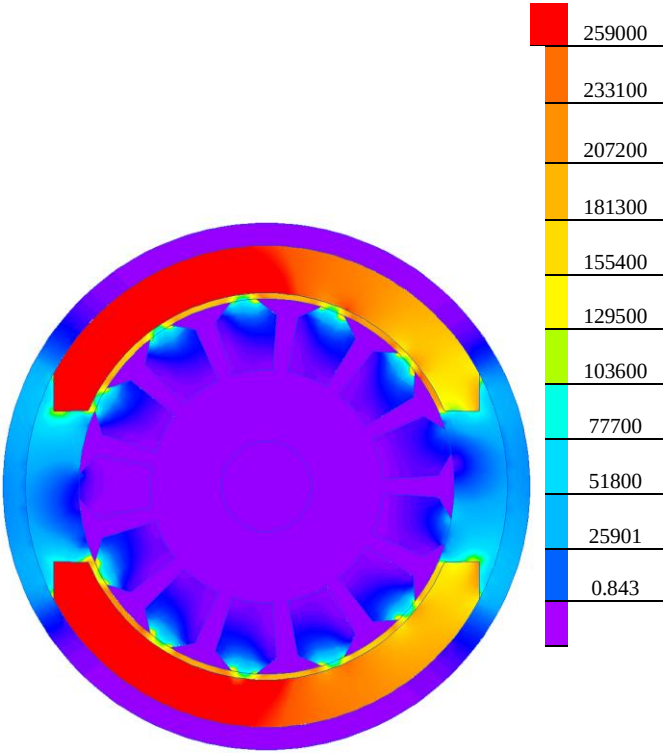
Results

Field lines



Results

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



Nonlinear dependencies

Table 2. BH-curve

B [T]	H [A/m]
0	0
0.1	100
0.2	140
0.3	180
0.4	210
0.5	250
0.6	295
0.7	345
0.8	405
0.9	480
1	570
1.1	690
1.2	845
1.3	1080
1.4	1490
1.5	2270
1.6	4000
1.7	7050
1.8	11900
1.9	18800
2	29000

Table 3. BH-curve

B [T]	H [A/m]
0	0

0.2	50
0.6	100
1.05	200
1.25	300
1.4	500
1.52	1000
1.61	2000
1.66	3000
1.73	5000
1.85	10000
2	20000
2.1	30000

Table 4. BH-curve

B [T]	H [A/m]
0	-242000
0.03	-240000
0.055	-230000
0.39	0

Table 5. BH-curve

B [T]	H [A/m]
0	-242000
0.03	-240000
0.055	-230000
0.39	0