## C-Core Actuator Command input file

/

/ Actuator Electromagnetic Simulation Programme

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/\* \*

/\* This command input file creates an e-core design actuator \*

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/\* nstitutive Parameters: \*

/\* \*

/\* #I: circuit input current \*

/\* #NS: number of coil turns \*

/\* #mus: relative permeability \*

/\* #sigs: conductivity \*

/\* \*

/\* \*

/\* \*

/\* Geometry Parameters: \*

/\* \*

/\* #WCO - WIDTH OF THE CORE \*

/\* #WP - WIDTH OF THE POLE \*

/\* #WCL - WIDTH OF THE COIL \*

/\* #tco - THICKNESS OF THE CORE \*

/\* #gap - THE AIR GAP \*

/\* #HCO - HEIGHT OF THE CORE \*

/\* #HP - HEIGHT OF THE POLE \*

/\* #HC - HEIGHT OF ONE SIDE OF THE COIL \*

/\* #HV - HEIGHT OF THE VALVE PLATE \*

/\* (as given in the drawing) \*

/\* \*

/\* \*

/\* Coordinate Parameters: \*

/\* \*

/\* #D1 #D3 #N1 #N2 #N4 #N6 \*

/\* \*

/\* \*

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\*\*\*\*\* Setting up data file 'force.dat' \*\*\*\*\*

$os rm result.\*

$os rm force.dat

$open 1 force.dat write

$close 1

$open 1 mate1Radiometal.dat read

$read 1 #M1

$close 1

$constant #M #M1

$ open 1 force.dat append

$ form 1 integer

$ form 2 string string='%Material number='

$ assi 2 1

$ write 1 #M

$close 1

/\*\*\*\*\* Initializing geometry and constitutive parameters \*\*\*\*\*

/Defining solution type

 SET SOLN=AT

 SET ELEM=LINE

 SET SYMM=XY

 SET FIEL=MAGN

/Defining units and co-ordinate dimensions

unit length=mm

reco 0 400 0 400

/Setting up parameters

$para #D1 40

$para #D3 250

$para #N1 5

$para #N2 1

$para #N3 2

$para #N4 4

$para #N5 11

$para #N6 15

$para #N7 10

$para #N8 3

/ Current & number of turns in the coil

$para #I 1.70

$para #NS 136

/ Material properties for Yoke and valve plate

$para #mus 6300

$para #sigs 6.66666E+06

/ Actuator's Dimensions in mm

/$ASK #HV

$para #HCO 9.00

$para #WCO 23.55

$para #WPL 2.78

$para #WPR 2.78

$para #HP 6.22

$para #gap 0.05

$para #HC 0.65

$para #WCL 17.99

$para #HV 2.50

$para #tco 2.20

 / DANGER ZONE !!!!!! DON'T GO BELOW THIS POINT !!!!!!!!!!!

 /\*\*\*\*\* Running preprocess program to set up the model \*\*\*\*\*

/Setting up free space area

/ REGION 1:

DRAW SHAP=POLY

 CART XP=0,YP=0,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2+#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=0,YP=#D3,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 FINISH N=#N1\*6,CURV=0,BIAS=0.5,F=V,V=0

 quit

/REGION 2:

DRAW SHAP=POLY

 CART XP=0,YP=0,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3,YP=0,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 FINISH N=#N1\*6,CURV=0,BIAS=0.5,F=V,V=0

 quit

 /REGION 3:

DRAW SHAP=POLY

 CART XP=#D3,YP=0,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3,YP=#D3,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 FINISH N=#N1\*6,CURV=0,BIAS=0.5,F=V,V=0

 quit

 /REGION 4:

DRAW SHAP=POLY

 CART XP=#D3,YP=#D3,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2+#D1/2,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 CART XP=0,YP=#D3,CURV=0,N=#N1\*6,BIAS=0.5,F=NO

 FINISH N=#N1\*6,CURV=0,BIAS=0.5,F=V,V=0

 quit

MODI 1 4 MAT=0,PER=1,DEN=0,SIG=0,PHA=0,VEL=0

/Setting up the core area in actuator

/REGION 5:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2,CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N5\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 6:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N5\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N5\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#HP-#HC),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N4\*(#HP-#HC),CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 7:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 8:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#HCO-#HP),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N4\*(#HCO-#HP),CURV=0,BIAS=0.5,F=NO

 quit

 /Region 9:

 DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#HCO-#HP),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 FINISH N=#N4\*(#HCO-#HP),CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 10:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#HCO-#HP),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N4\*(#HCO-#HP),CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 11:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 12:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N1\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N1\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#HP-#HC),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N4\*(#HP-#HC),CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 13:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2,CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N5\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 quit

MODI 5 13 MATE=#M,PER=#mus,DEN=0,SIG=#sigs,PHA=0,VEL=0

 /Setting up the coil area in actuator

/REGION 14:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCL/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2-#HCO/2+#HP-#HC,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCL/2,YP=#D3/2-#HCO/2+#HP-#HC,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

quit

MODI 14 14 MATE=1,PER=1,DEN=(1E+6)\*#NS\*#I/area,SIG=0,PHA=0,VEL=0,SYMM=0,N=1

/Region 15:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

quit

MODI 15 15 MATE=1,PER=1,DEN=-(1E+6)\*#NS\*#I/area,SIG=0,PHA=0,VEL=0,SYMM=0,N=4

 /Setting up the valve area in actuator

/REGION 16:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 17:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N1\*#HV,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N1\*#HV,CURV=0,BIAS=0.5,F=NO

 quit

/REGION 18:

DRAW SHAP=POLY

CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N3,BIAS=0.5,F=NO

CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

quit

/REGION 19:

DRAW SHAP=POLY

CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N1\*#HV,BIAS=0.5,F=NO

CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N1\*#HV,CURV=0,BIAS=0.5,F=NO

quit

/REGION 20:

DRAW SHAP=POLY

CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N3,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

quit

/REGION 21:

DRAW SHAP=POLY

CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N1\*#HV,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N1\*#HV,CURV=0,BIAS=0.5,F=NO

quit

/REGION 22:

DRAW SHAP=POLY

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WPR,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WPR,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N3,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

qui

/REGION 23:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N1\*#HV,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N5\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N1\*#HV,CURV=0,BIAS=0.5,F=NO

 quit

MODI 16 23 MAT=#M,PER=#mus,DEN=0,SIG=#sigs,PHA=0,VEL=0

 /Setting up the gap area in actuator

/REGION 24:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2,CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 25:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 26:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-(#HCO/2+(2\*#gap/3)),CURV=0,N=#N6\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 quit

/REGION 27:

DRAW SHAP=POLY

CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-#HCO/2,CURV=0,N=#N2,BIAS=0.5,F=NO

CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2,CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

quit

/REGION 28:

DRAW SHAP=POLY

CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

quit

/REGION 29:

DRAW SHAP=POLY

CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

quit

/REGION 30:

DRAW SHAP=POLY

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2,CURV=0,N=#N2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-#HCO/2,CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

quit

/REGION 31:

DRAW SHAP=POLY

CART XP=#D3/2,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

quit

/REGION 32:

DRAW SHAP=POLY

CART XP=#D3/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

CART XP=#D3/2,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

quit

/REGION 33:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2,CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 34:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 35:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N6\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 quit

MODI 24 35 MAT=0,PER=1,DEN=0,SIG=0,PHA=0,VEL=0

/ creating air regions around the model

/REGION 36:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N1\*#HV,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N1\*#HV,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 37:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 38:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-(#HCO/2+(2\*#gap/3)),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+(2\*#gap/3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 39:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+(2\*#gap/3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-(#HCO/2+(2\*#gap/3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 40:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 41:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 42:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#HP-#HC),BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*(#HP-#HC),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 43:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 44:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#HCO-#HP),BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*(#HCO-#HP),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 45:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 quit

/REGION 46:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 47:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#D1/2,CURV=0,N=#N8\*(#D1/2-#HCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2+#D1/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 48:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#D1/2,CURV=0,N=#N8\*(#D1/2-#HCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2,YP=#D3/2+#D1/2,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 49:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#D1/2,CURV=0,N=#N8\*(#D1/2-#HCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCL/2,YP=#D3/2+#D1/2,CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 50:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 quit

/REGION 51:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#D1/2,CURV=0,N=#N8\*(#D1/2-#HCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCL/2,YP=#D3/2+#D1/2,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 52:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#D1/2,CURV=0,N=#N8\*(#D1/2-#HCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#D1/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 53:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2+#HC,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 54:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#HCO-#HP),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2+#HCO/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*(#HCO-#HP),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 55:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*#HC,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+#HP,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*#HC,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 56:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#HP-#HC),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N4\*(#HP-#HC),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 57:

DRAW SHAP=POLY

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 58:

DRAW SHAP=POLY

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 59:

DRAW SHAP=POLY

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 yes

 quit

 /REGION 60:

DRAW SHAP=POLY

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N2,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+2\*#gap/3),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N2,CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 61:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2+(#WCO/2),YP=#D3/2-(#HCO/2+#gap),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 yes

 quit

 /REGION 62:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N1\*#HV,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+(#gap\*3)),CURV=0,N=#N7\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N1\*#HV,CURV=0,BIAS=0.5,F=NO

 yes

 quit

 /REGION 63:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#D1/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-#D1/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2+#D1/2,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N8\*(#D1/2-#HCO/2-#gap-#HV),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2-#gap-#HV),CURV=0,BIAS=0.5,F=NO

 yes

 quit

 /REGION 64:

DRAW SHAP=POLY

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N8\*(#D1/2-#HCO/2-#gap-#HV),BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N4\*#WPR,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2-#gap-#HV),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 65:

DRAW SHAP=POLY

 CART XP=#D3/2,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-(#HCO/2+#gap+#HV),CURV=0,N=#N8\*(#D1/2-#HCO/2-#gap-#HV),BIAS=0.5,F=NO

 CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2-#gap-#HV),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 66:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N8\*(#D1/2-#HCO/2-#gap-#HV),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WCL/2,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2-#gap-#HV),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 67:

DRAW SHAP=POLY

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-#D1/2,CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2)+#WPL,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N8\*(#D1/2-#HCO/2-#gap-#HV),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*#WPL,BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2-#gap-#HV),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/REGION 68:

DRAW SHAP=POLY

 CART XP=#D3/2-#D1/2,YP=#D3/2-#D1/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-#D1/2,CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 CART XP=#D3/2-(#WCO/2),YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N8\*(#D1/2-#HCO/2-#gap-#HV),BIAS=0.5,F=NO

 CART XP=#D3/2-#D1/2,YP=#D3/2-(#HCO/2+(#gap+#HV)),CURV=0,N=#N4\*(#D1/2-#WCO/2),BIAS=0.5,F=NO

 FINISH N=#N8\*(#D1/2-#HCO/2-#gap-#HV),CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 69:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2,CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2,YP=#D3/2-#HCO/2,CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 70:

DRAW SHAP=POLY

 CART XP=#D3/2,YP=#D3/2-#HCO/2,CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2,CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N3,BIAS=0.5,F=NO

 CART XP=#D3/2,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*#WCL/2,BIAS=0.5,F=NO

 FINISH N=#N3,CURV=0,BIAS=0.5,F=NO

 quit

 /REGION 71:

DRAW SHAP=POLY

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#gap\*2),CURV=0,N=#N7\*#WCL,BIAS=0.5,F=NO

 CART XP=#D3/2+#WCO/2-#WPR,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*(#HP-#HC),BIAS=0.5,F=NO

 CART XP=#D3/2-#WCO/2+#WPL,YP=#D3/2-#HCO/2+(#HP-#HC),CURV=0,N=#N4\*#WCL,BIAS=0.5,F=NO

 FINISH N=#N4\*(#HP-#HC),CURV=0,BIAS=0.5,F=NO

 yes

 quit

/Selectining the B-H curve of the magnetic material

$os rm mate3.bh

bhdat mate=3

load radiometal\_4550.bh

store mate3

q

mesh erro=yes

no

SOLVE TYPE=ST

DATA

LINE=NO

ITTY=NEWT

NITE=99

TOLE=0.0000000001

quit

WRIT FILE=c-core\_50vp05