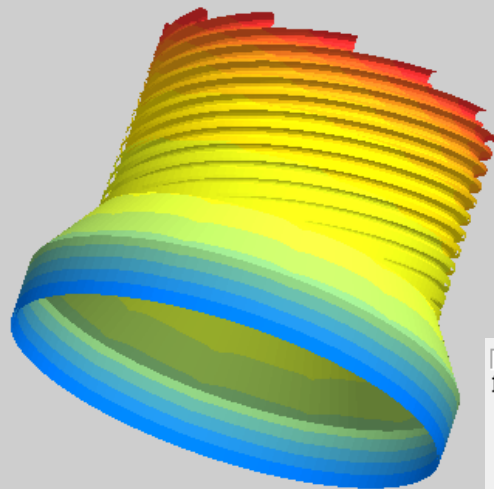
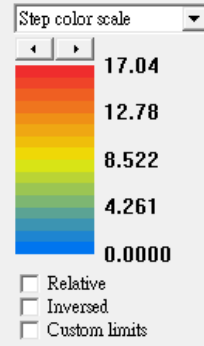


$T_{in}=180\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, MI=1 LLDPE $Q=250\text{ kg/hr}$

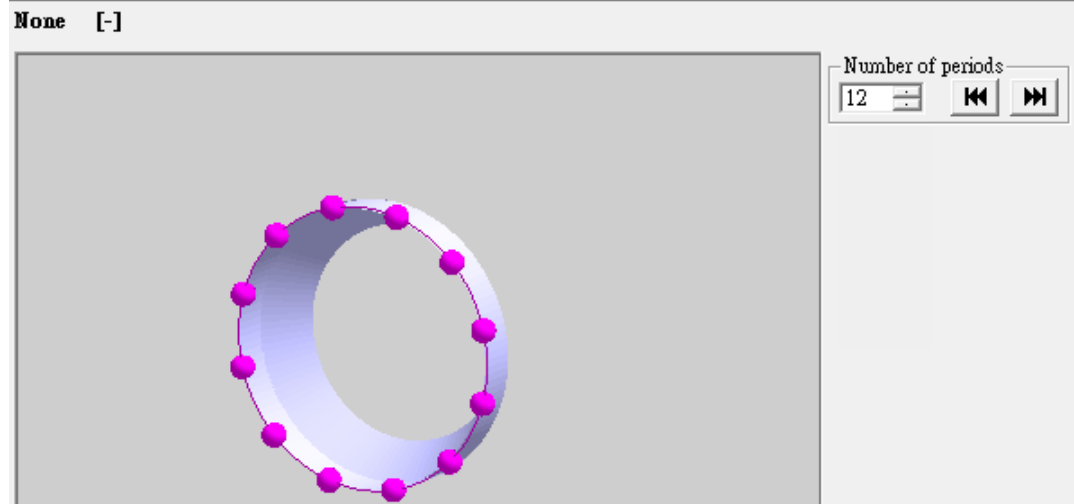
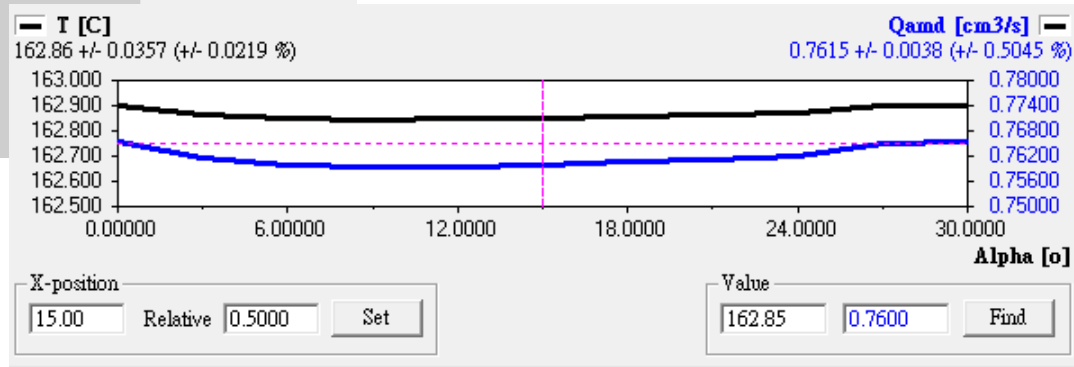
Pressure [MPa]



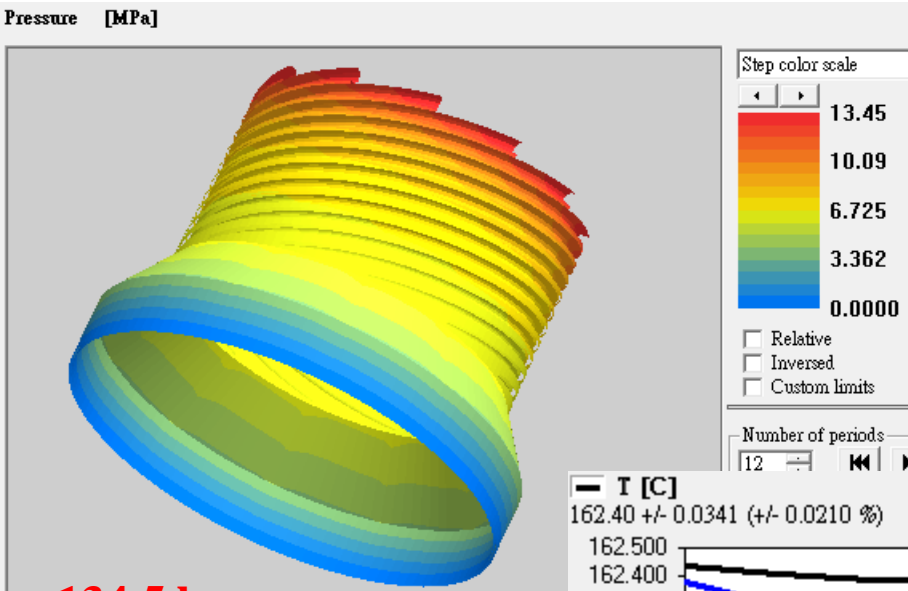
170 bar



Pressure drop - mandrel = 9.458 MPa
 Temperature change - mandrel = -12.35 C
 Distribution variation: $\pm 0.0191\text{ cm}^3/\text{s}$ ($\pm 2.507\%$)
 Pressure drop - sections above = 7.585 MPa
 Temperature change - sections above = -6.588 C
 Distribution variation: $\pm 0.0038\text{ cm}^3/\text{s}$ ($\pm 0.5045\%$)
 Total pressure drop = 21.97 MPa
 Total temperature change = -17.14 C

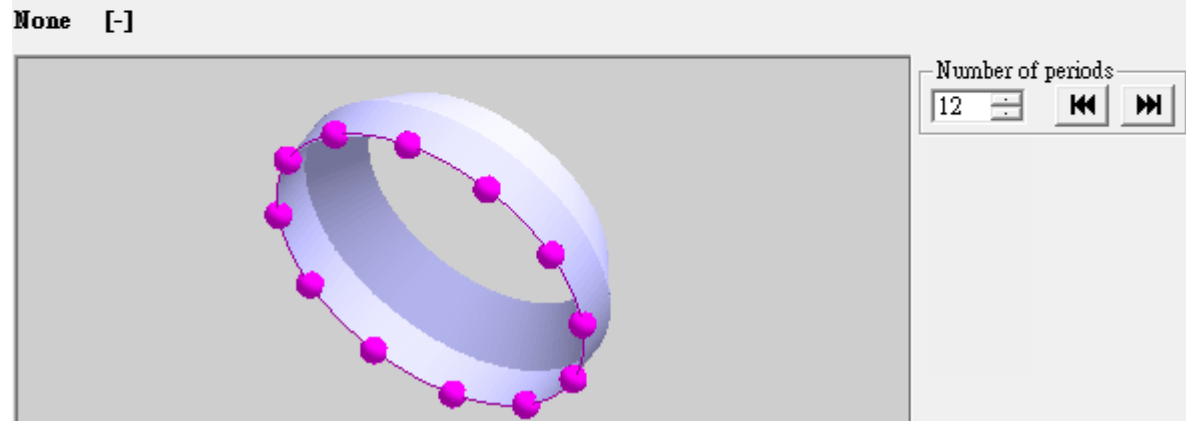
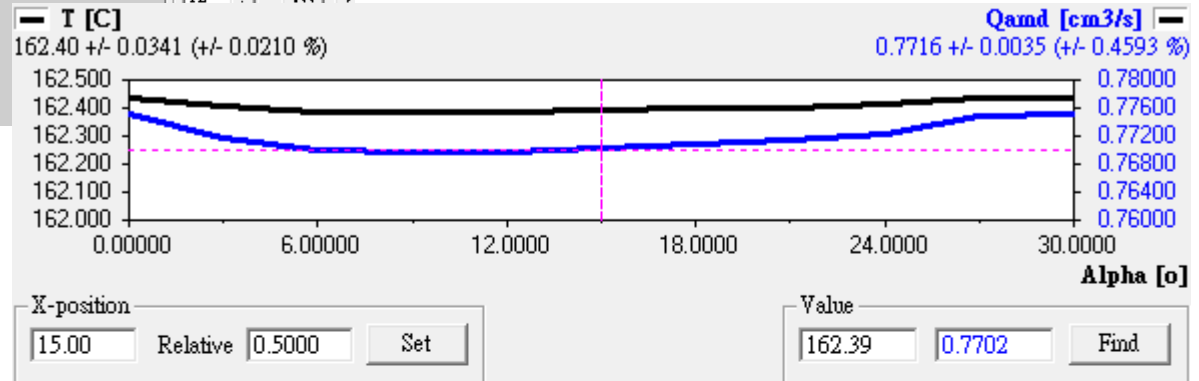


$T_{in}=180\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, MI=1 LDPE $Q=250\text{ kg/hr}$



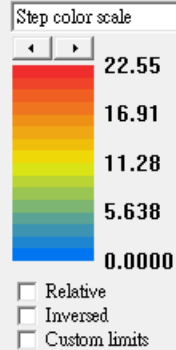
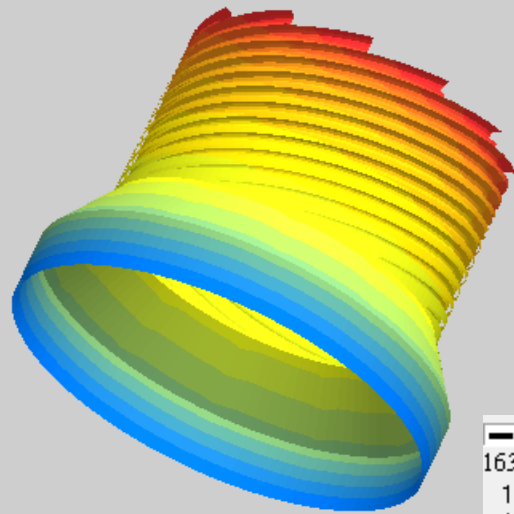
Pressure drop - mandrel = 7.362 MPa
Temperature change - mandrel = -12.59 C
Distribution variation: $\pm 0.0186\text{ cm}^3/\text{s}$ ($\pm 2.404\%$)
Pressure drop - sections above = 6.087 MPa
Temperature change - sections above = -6.265 C
Distribution variation: $\pm 0.0035\text{ cm}^3/\text{s}$ ($\pm 0.4593\%$)
Total pressure drop = 17.37 MPa
Total temperature change = -17.60 C

134.5 bar



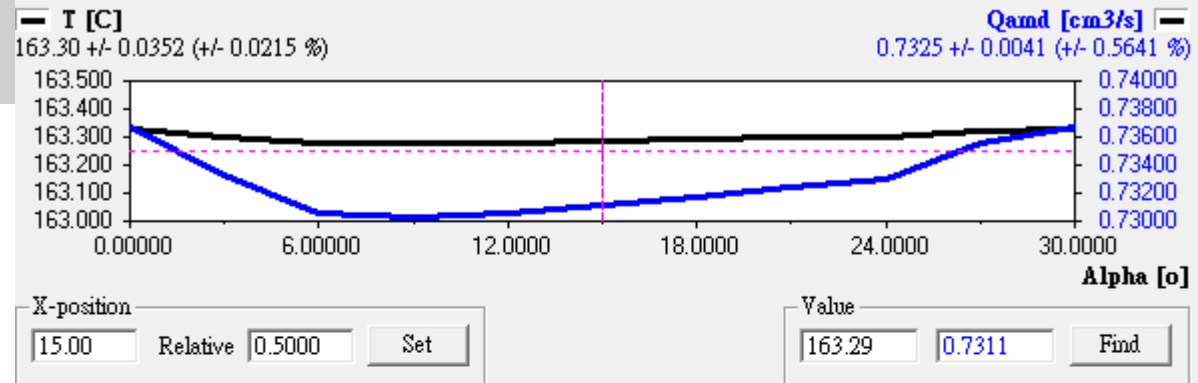
$T_{in}=180\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, $MI=0.1$ HDPE $Q=250\text{ kg/hr}$

Pressure [MPa]

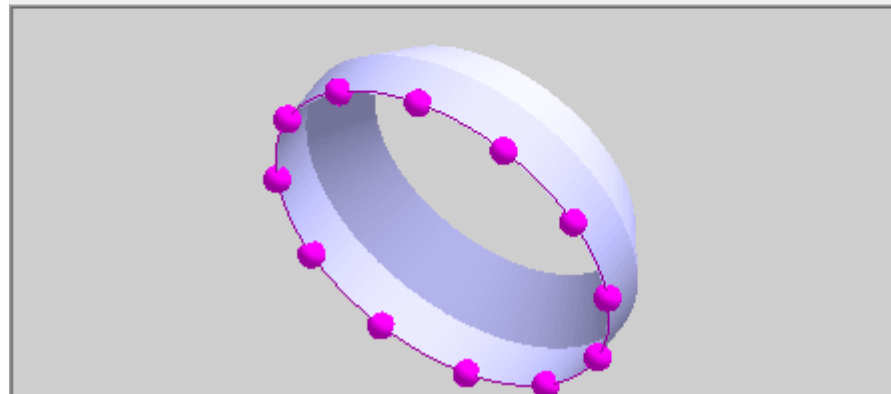


Pressure drop - mandrel = 12.09 MPa
Temperature change - mandrel = -9.641 C
Distribution variation: +/- 0.0231 cm³/s (+/- 3.149 %)
Pressure drop - sections above = 10.46 MPa
Temperature change - sections above = -9.466 C
Distribution variation: +/- 0.0041 cm³/s (+/- 0.5641 %)
Total pressure drop = 28.87 MPa
Total temperature change = -16.70 C

225.5 bar

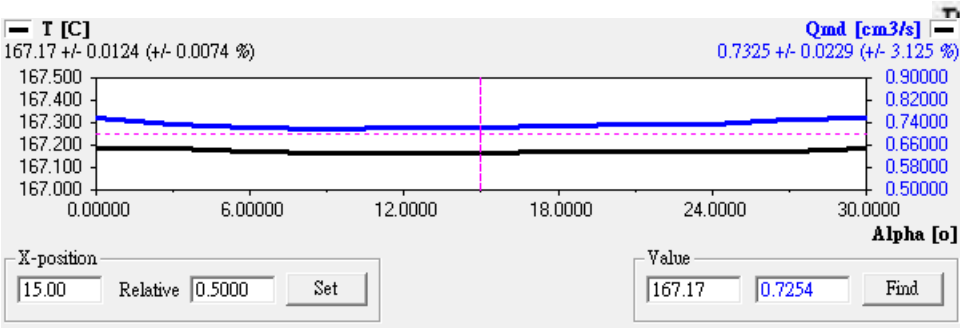


None [-]

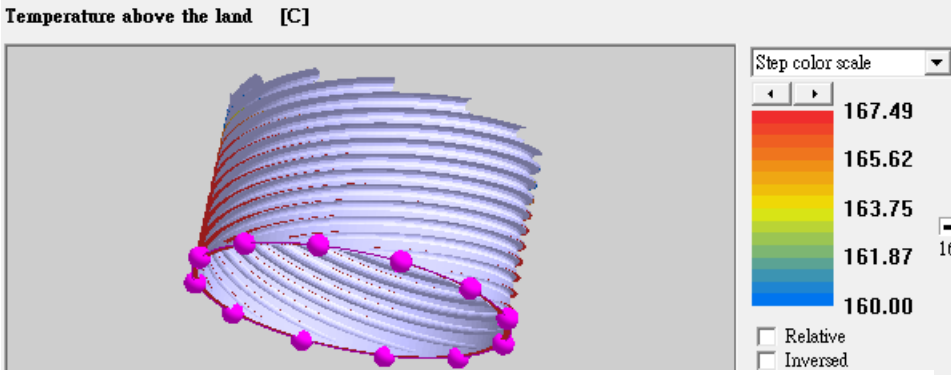


Number of periods
12

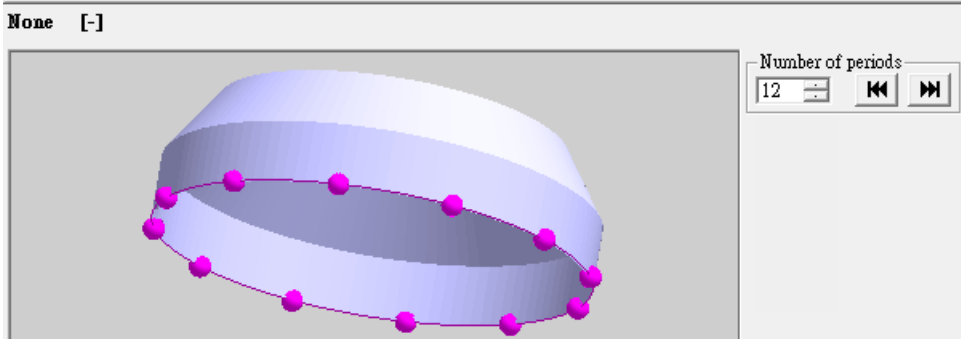
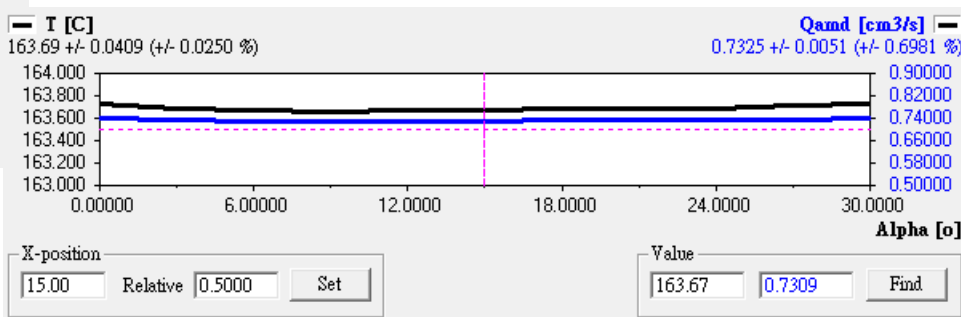
$T_{in}=160\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, $MI=0.1$ HDPE $Q=250\text{ kg/hr}$



Pressure drop - mandrel = 15.52 MPa
 temperature change - mandrel = 2.409 C
 distribution variation: +/- 0.0229 cm³/s (+/- 3.125 %)
 Pressure drop - sections above = 11.70 MPa
 temperature change - sections above = -3.485 C
 distribution variation: +/- 0.0051 cm³/s (+/- 0.6981 %)
 Total pressure drop = 36.63 MPa **366.3 bar**
 Total temperature change = 3.687 C

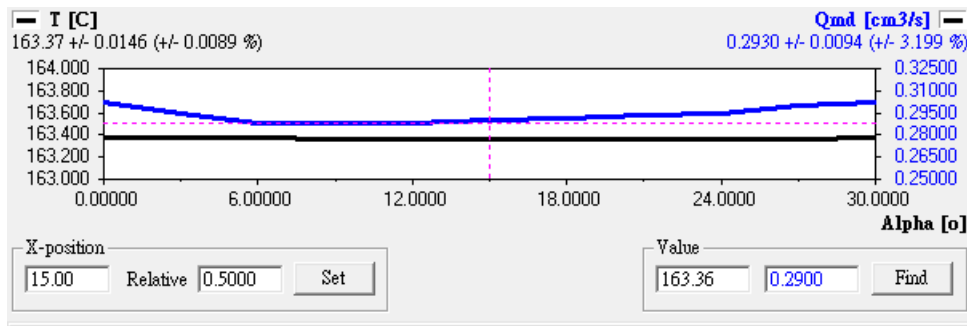


167.2 C



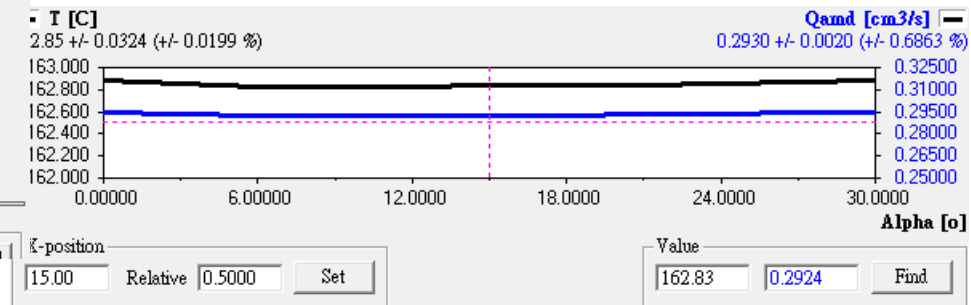
163.7 C

$T_{in}=160\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, $MI=0.1$ HDPE $Q=100\text{ kg/hr}$



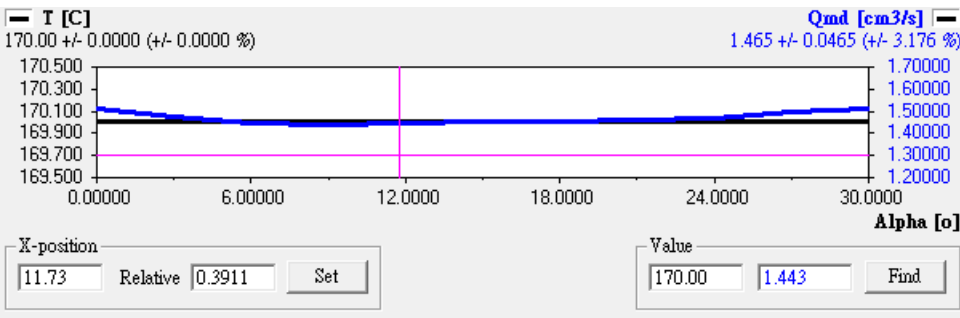
$163.4\text{ }^{\circ}\text{C}$

Pressure drop - mandrel = 11.65 MPa
 Temperature change - mandrel = -0.0395 C
 Distribution variation: +/- 0.0094 cm³/s (+/- 3.199 %)
 Pressure drop - sections above = 9.024 MPa
 Temperature change - sections above = -0.5215 C
 Distribution variation: +/- 0.0020 cm³/s (+/- 0.6863 %)
 Total pressure drop = 27.41 MPa **274.1 bar**
 Total temperature change = 2.845 C

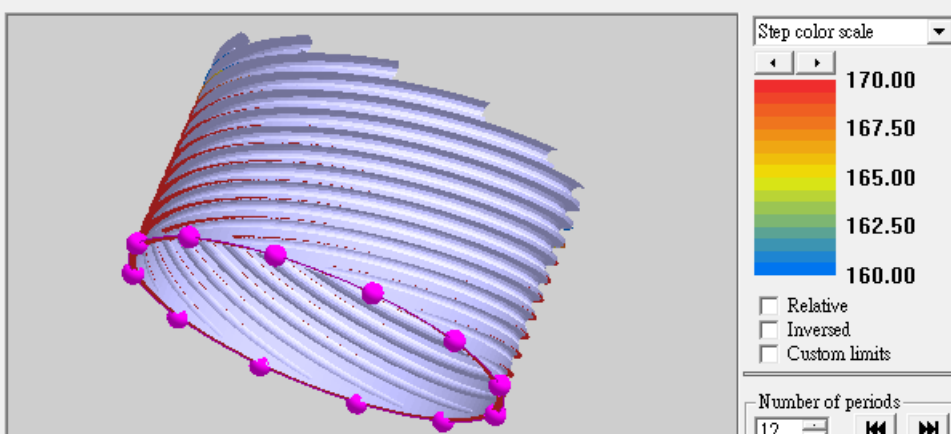


$162.8\text{ }^{\circ}\text{C}$

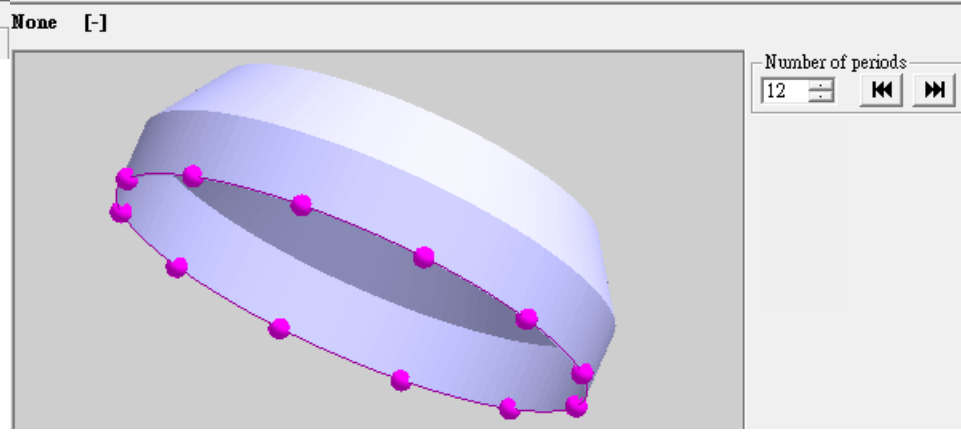
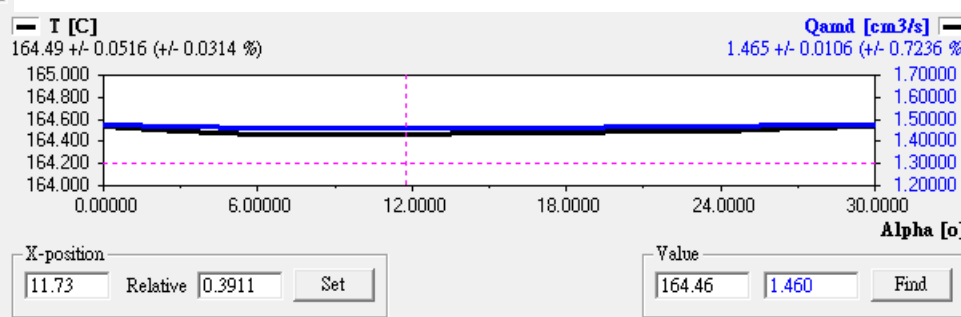
$T_{in}=160\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, $MI=0.1$ HDPE $Q=500$ kg/hr



Pressure drop - mandrel = 19.14 MPa
 Temperature change - mandrel = 3.867 C
 Distribution variation: +/- 0.0465 cm³/s (+/- 3.176 %)
 Pressure drop - sections above = 14.26 MPa
 Temperature change - sections above = -5.512 C
 Distribution variation: +/- 0.0106 cm³/s (+/- 0.7236 %)
 Total pressure drop = 45.52 MPa **455.2 bar**
 Total temperature change = 4.488 C

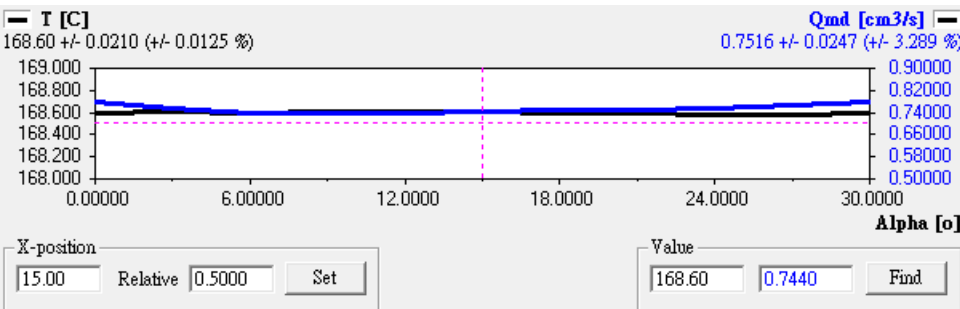


170 °C



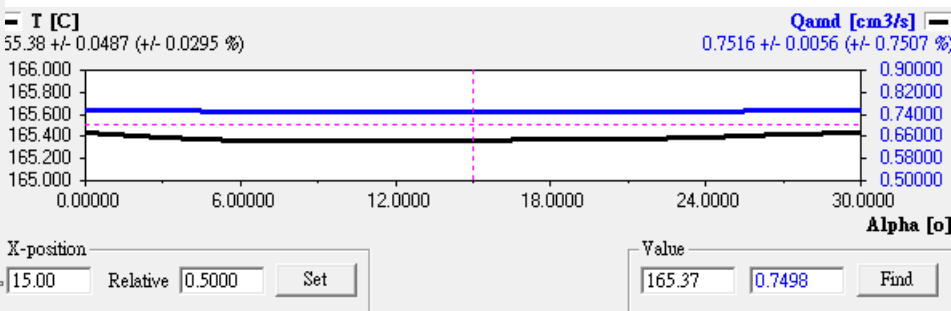
164.5 °C

$T_{in}=160\text{ }^{\circ}\text{C}$, $T_b=160\text{ }^{\circ}\text{C}$, $MI=0.05$ HDPE $Q=250\text{ kg/hr}$



Pressure drop - mandrel = 20.70 MPa
 Temperature change - mandrel = 2.272 C
 Distribution variation: $\pm 0.0247\text{ cm}^3/\text{s}$ ($\pm 3.289\%$)
 Pressure drop - sections above = 15.40 MPa
 Temperature change - sections above = -3.214 C
 Distribution variation: $\pm 0.0056\text{ cm}^3/\text{s}$ ($\pm 0.7507\%$)
 Total pressure drop = 47.07 MPa
 Total temperature change = 5.383 C

470.7 bar

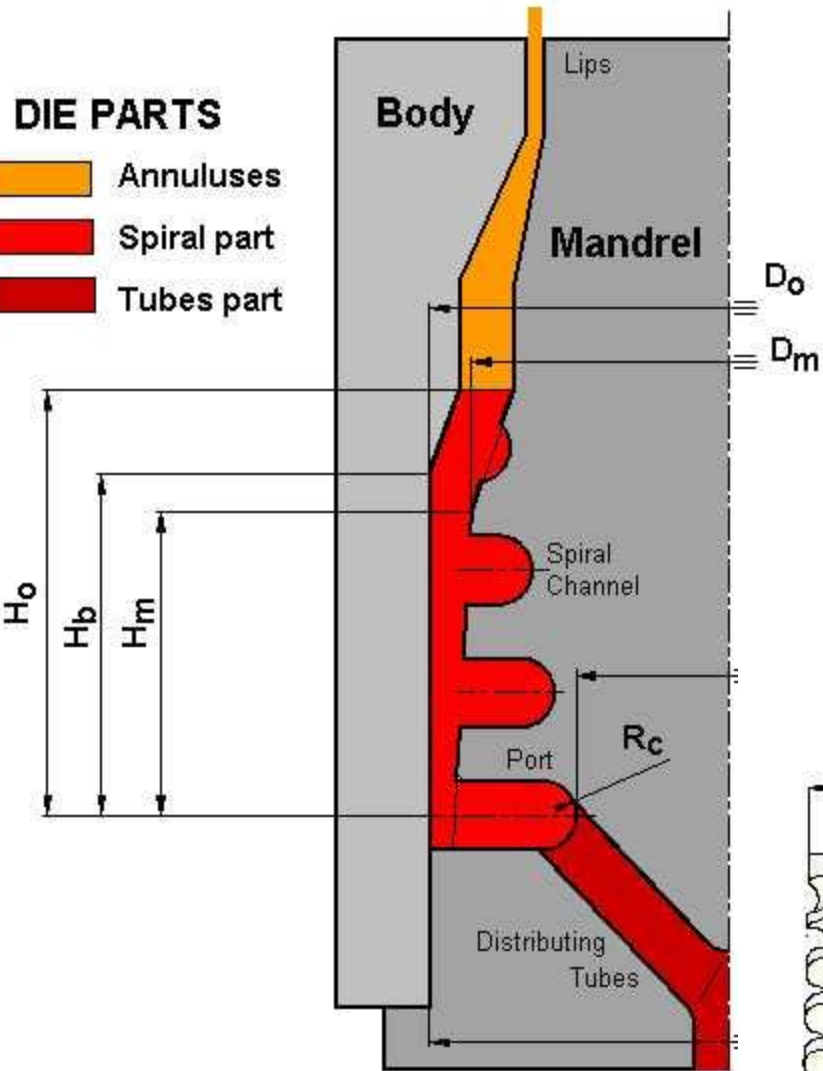


168.6 °C

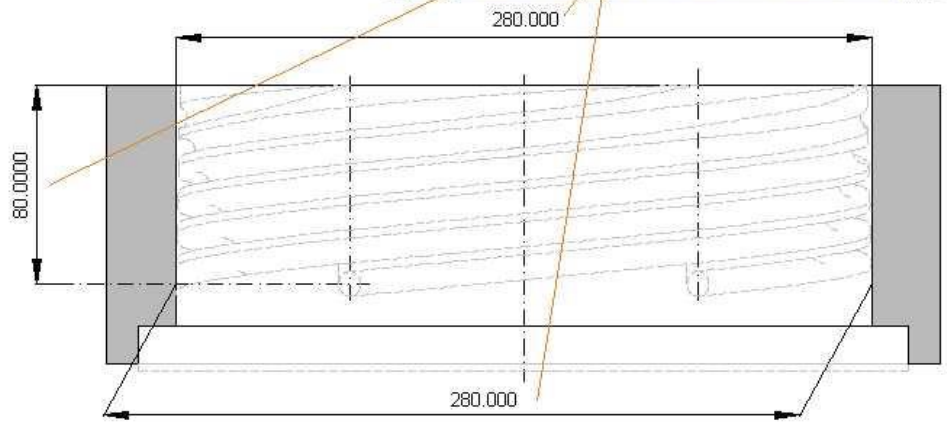
165.4 °C

DIE PARTS

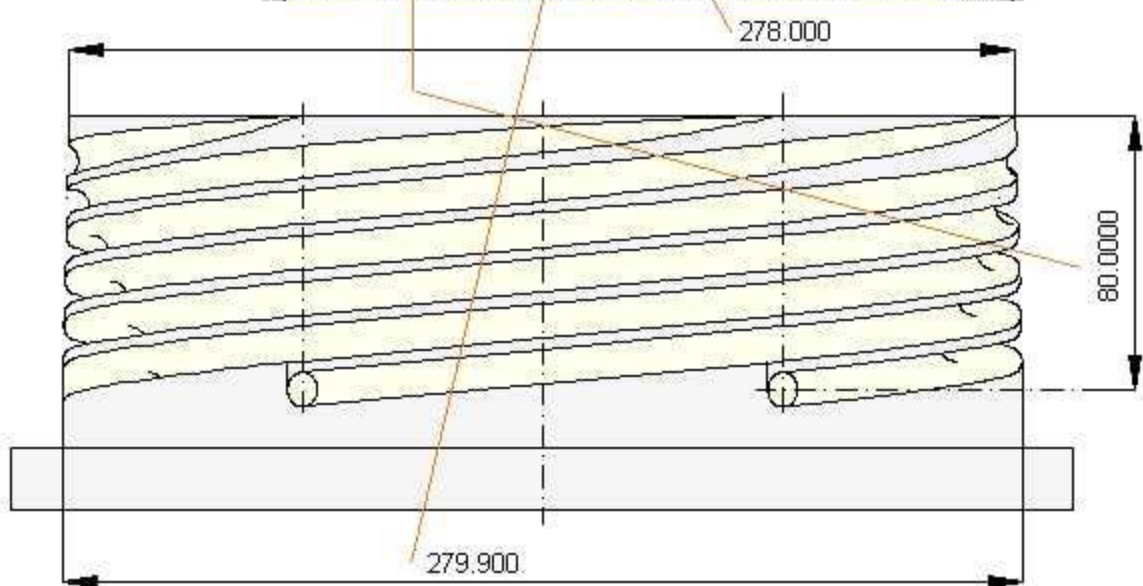
- Annuluses
- Spiral part
- Tubes part

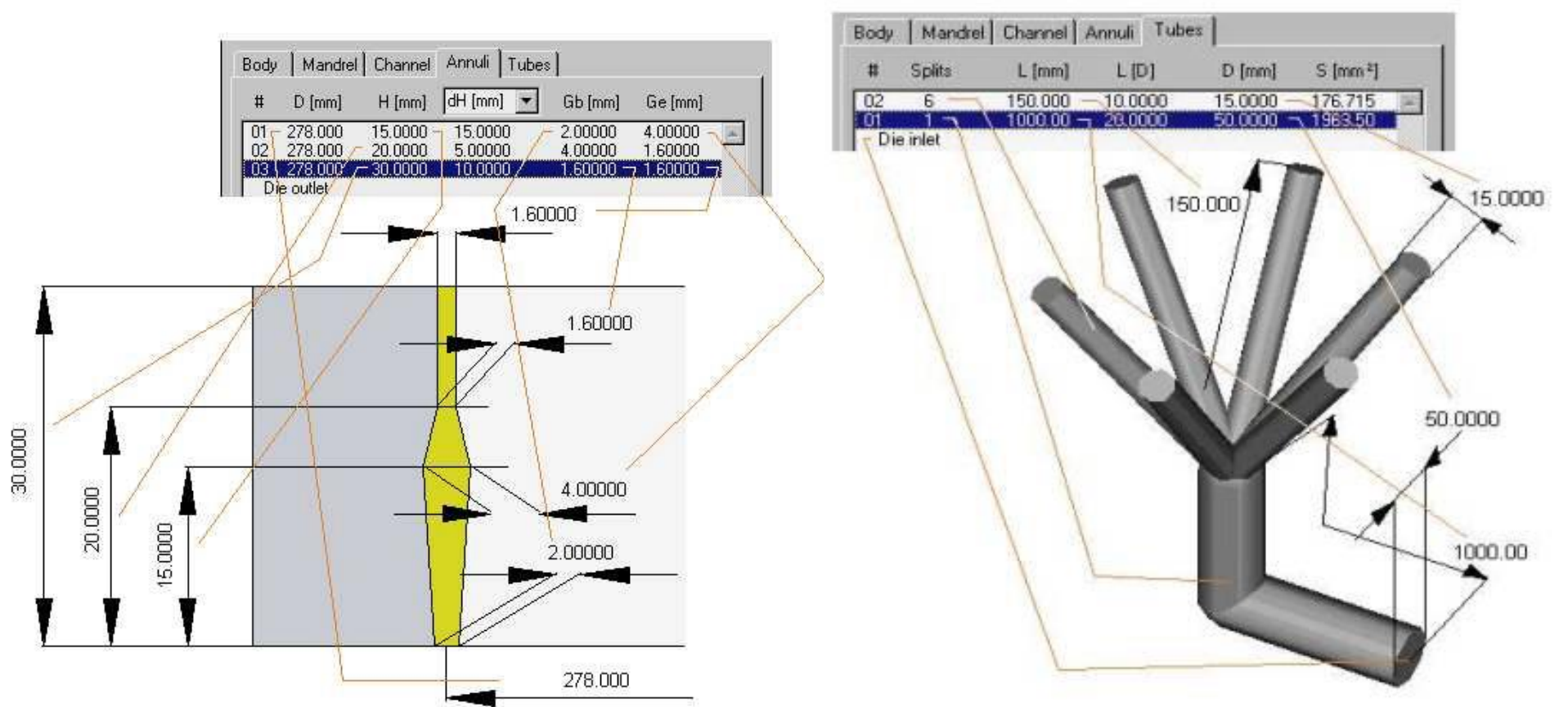


Body	Mandrel	Channel	Annuli	Tubes
H/Ho	H [mm]	D [mm]	D-Do [mm]	gap [mm]
1.00000	80.0000	280.000	0.00000	1.00000
0.00000	0.00000	280.000	0.00000	1.00000



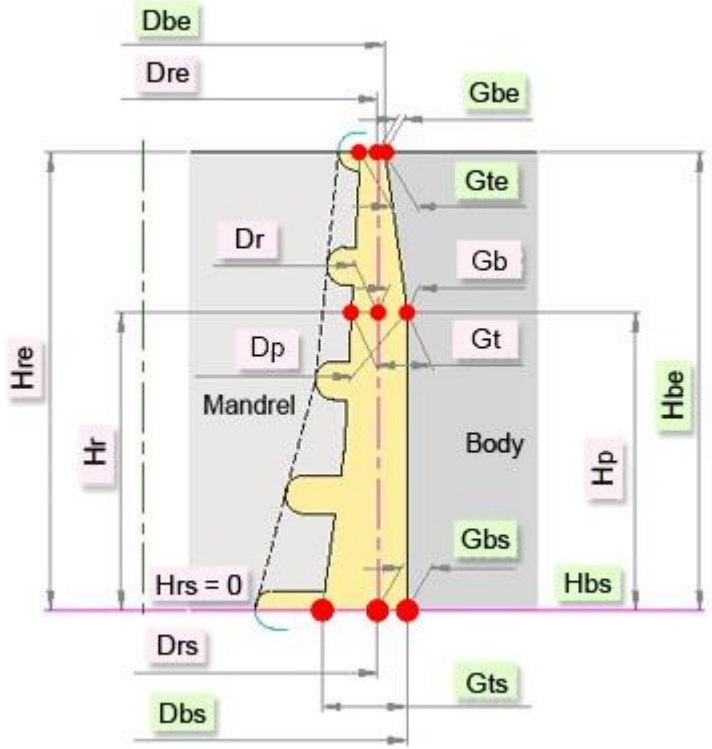
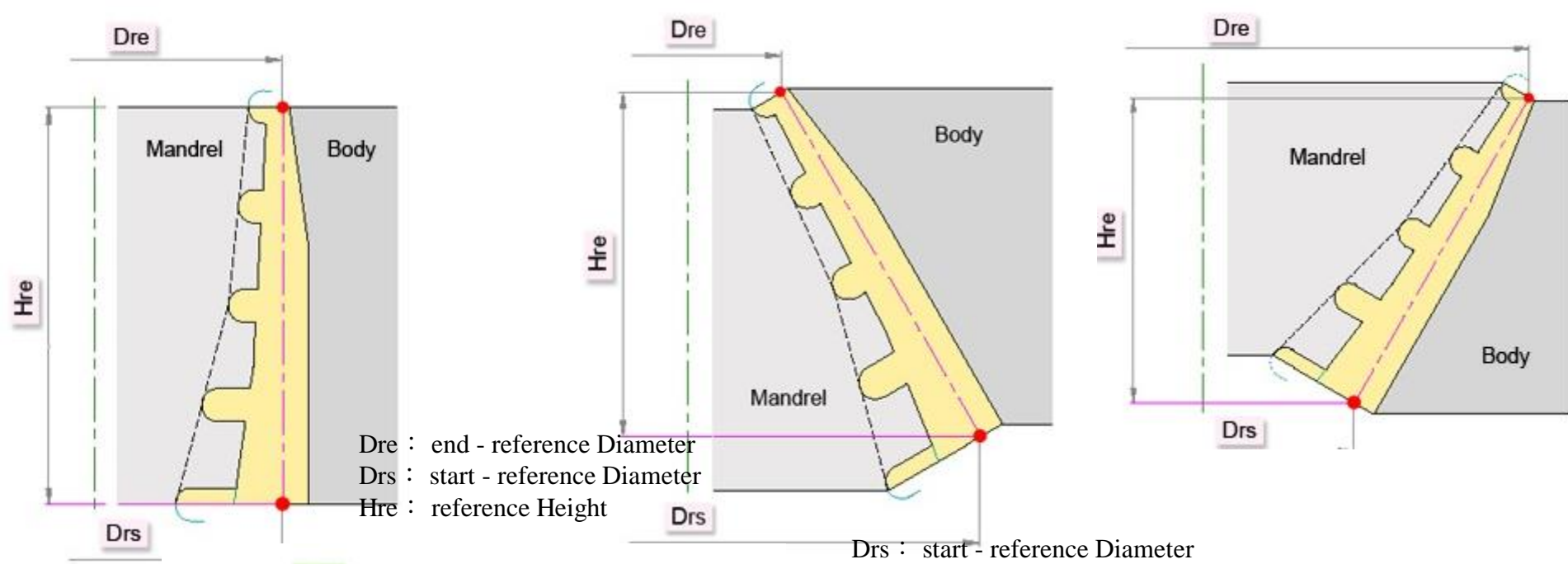
Body	Mandrel	Channel	Annuli	Tubes
H/Ho	H [mm]	D [mm]	D-Do [mm]	gap [mm]
1.00000	80.0000	278.000	-2.00000	2.00000
0.00000	0.00000	279.900	-0.10000	0.05000





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Body

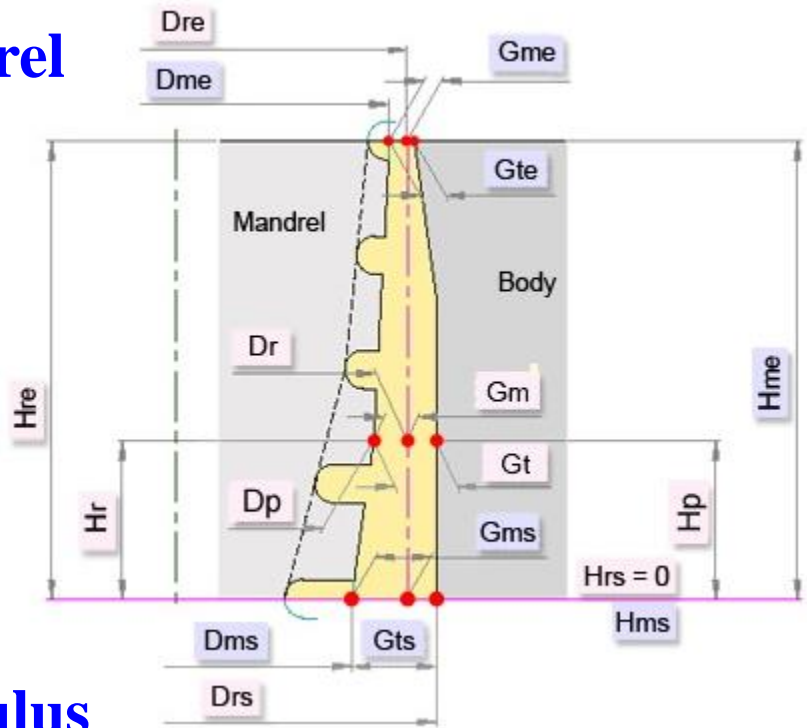


Drs : start - reference Diameter
 Hrs : start - reference Height
 Dbs : start - body Diameter
 Hbs : start - body Height
 Gbs : start - body Gap
 Gts : start - total Gap

Hr : reference Height (at the position)
 Dr : reference Diameter (at the position)
 Hp : body Height (at the point on body surface)
 Dp : body Diameter (at the point on body surface)
 Gb : body Gap (from reference cone)
 Gt : total Gap

Dre : end reference Diameter
 Hre : end reference Height
 Dbe : end body Diameter
 Hbe : end body Height
 Gbe : end body Gap
 Gte : end total Gap

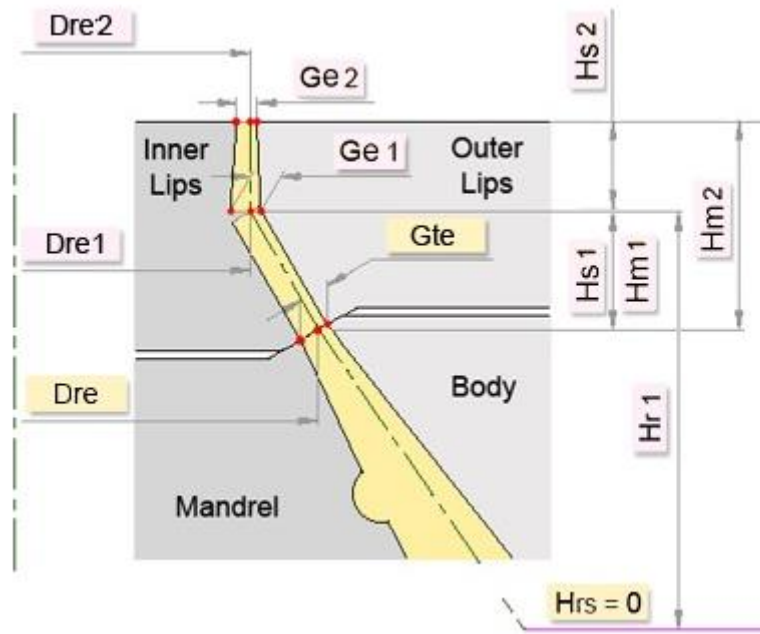
Mandrel



- Mandrel Dimensions
- Drs : start - reference Diameter
 - Hre : reference cone Height
 - Dms : start - mandrel Diameter
 - Hms : start - mandrel Height
 - Gms : start mandrel Gap (from reference line)

 - Gt : total Gap
 - Hr : reference Height
 - Dr : reference Diameter
 - Hp : mandrel Height at the point of mandrel surface
 - Dp : mandrel Diameter at the point of mandrel surface
 - Gm : mandrel Gap (from reference cone)

Annulus



- Annulus part dimensions
- Dr : reference diameter
 - Dre : reference diameter at the end of spiral part
 - Gt : total gap
 - Gte : total gap at the end of spiral part
 - Ha : height measured on the annuli part
 - Hr : total die height, i.e. the total spiral part height added

 - Radius : the dimension is related to the reference line
 - Gap : desired final clearance
 - End angle : desired/calculated final angle related to the reference line
 - Height : the height measured on the reference line
 - Diameter : measured on the reference line

 - calc. : calculated (parameter)
 - prec. : precision (of angle)