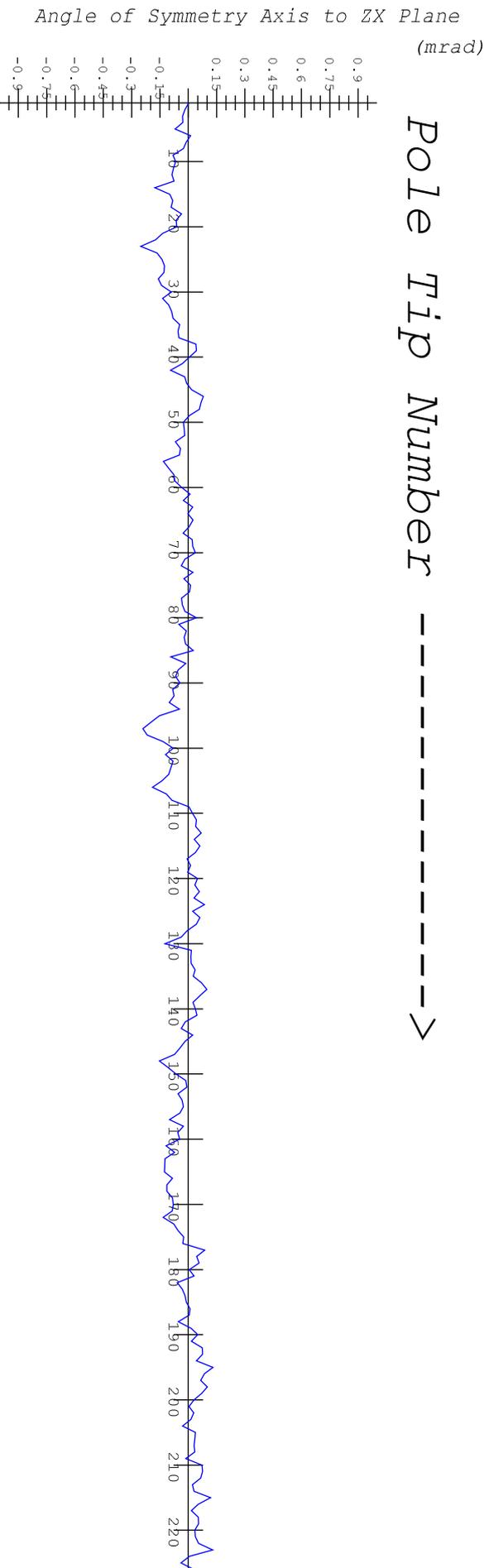


Pole Tip Number ----->



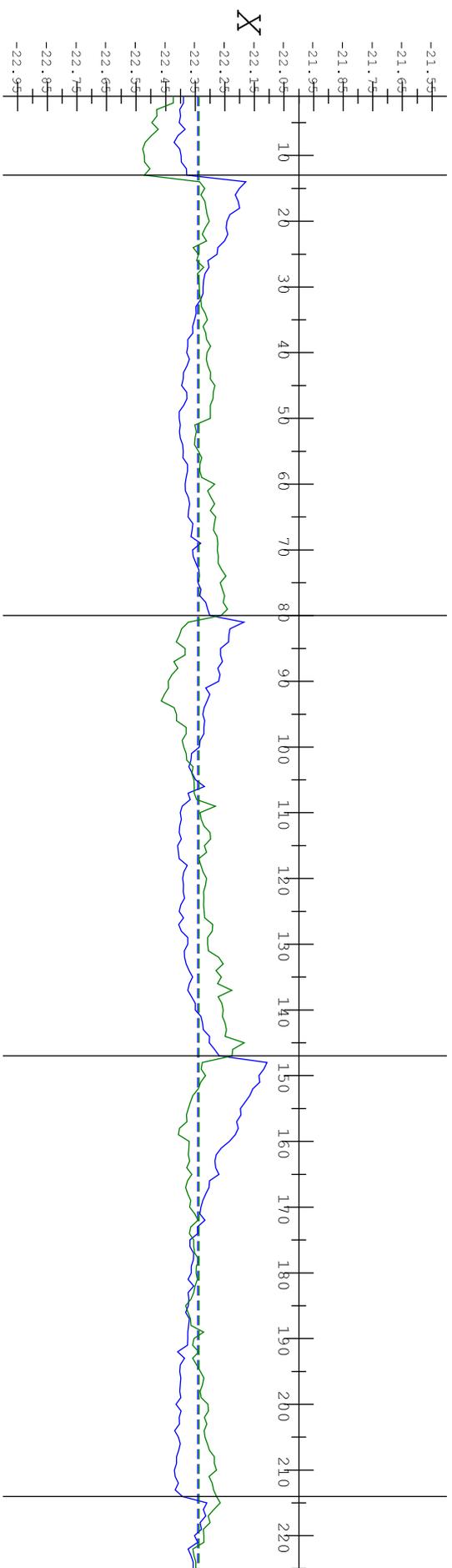
Symmetry Axis is the symmetry axis between the Upper and Lower Pole Tips  
 Included Angle is the angle between the Upper and Lower Pole Tips



Undulator Pole Tip Angles  
 Post Magnetic Alignment

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 UNDULATOR #20  
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# Pole Tip Number ----->



X values in mm

Green Solid = Point on front face of Upper Pole Tip 10mm above Magnetic C/L

Green Dash = Mean value of all Upper Pole Tips 10mm above Magnetic C/L Mean value Upper Pole Tips = -22.337

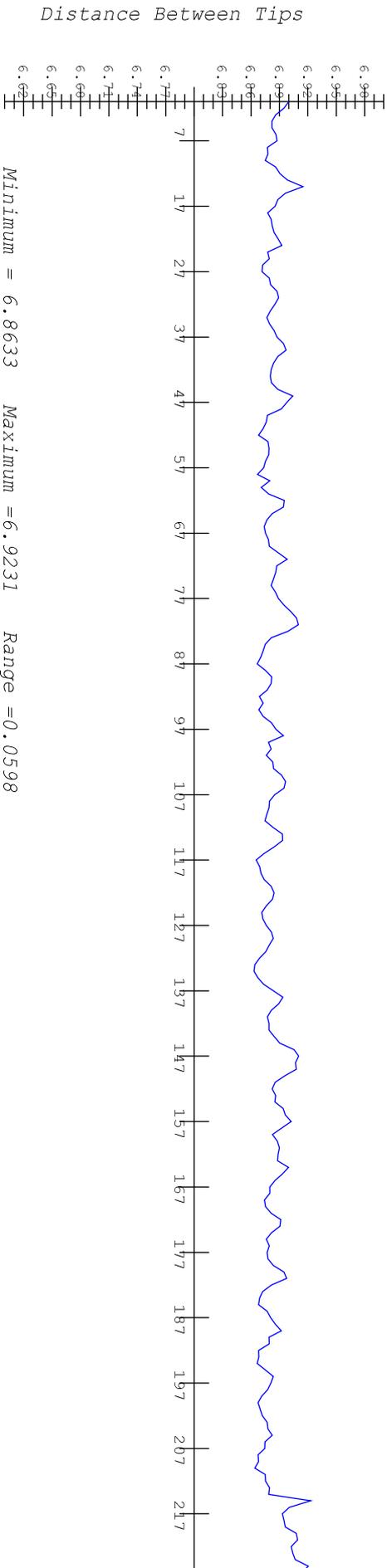
Blue Solid = Point on front face of Lower Pole Tip 10mm below Magnetic C/L

Blue Dash = Mean value of all Lower Pole Tips 10mm below Magnetic C/L Mean value Lower Pole Tips = -22.341



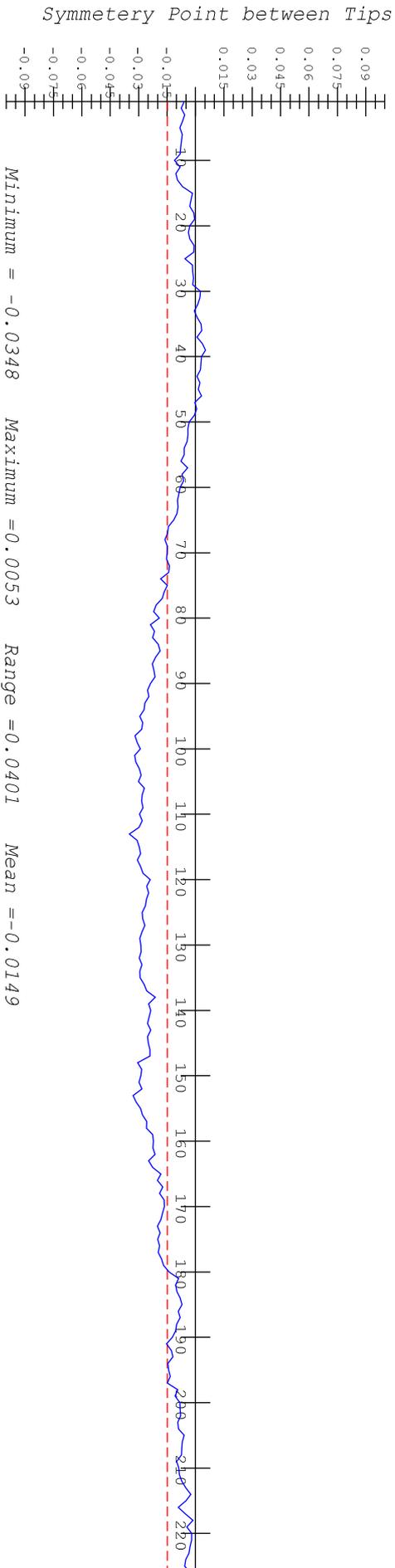
## Undulator Pole Tip Location Post Magnetic Alignment

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 UNDUULATOR #20  
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 PROGRAM VERSION 2.9



in mm

Pole Tip Number ----->



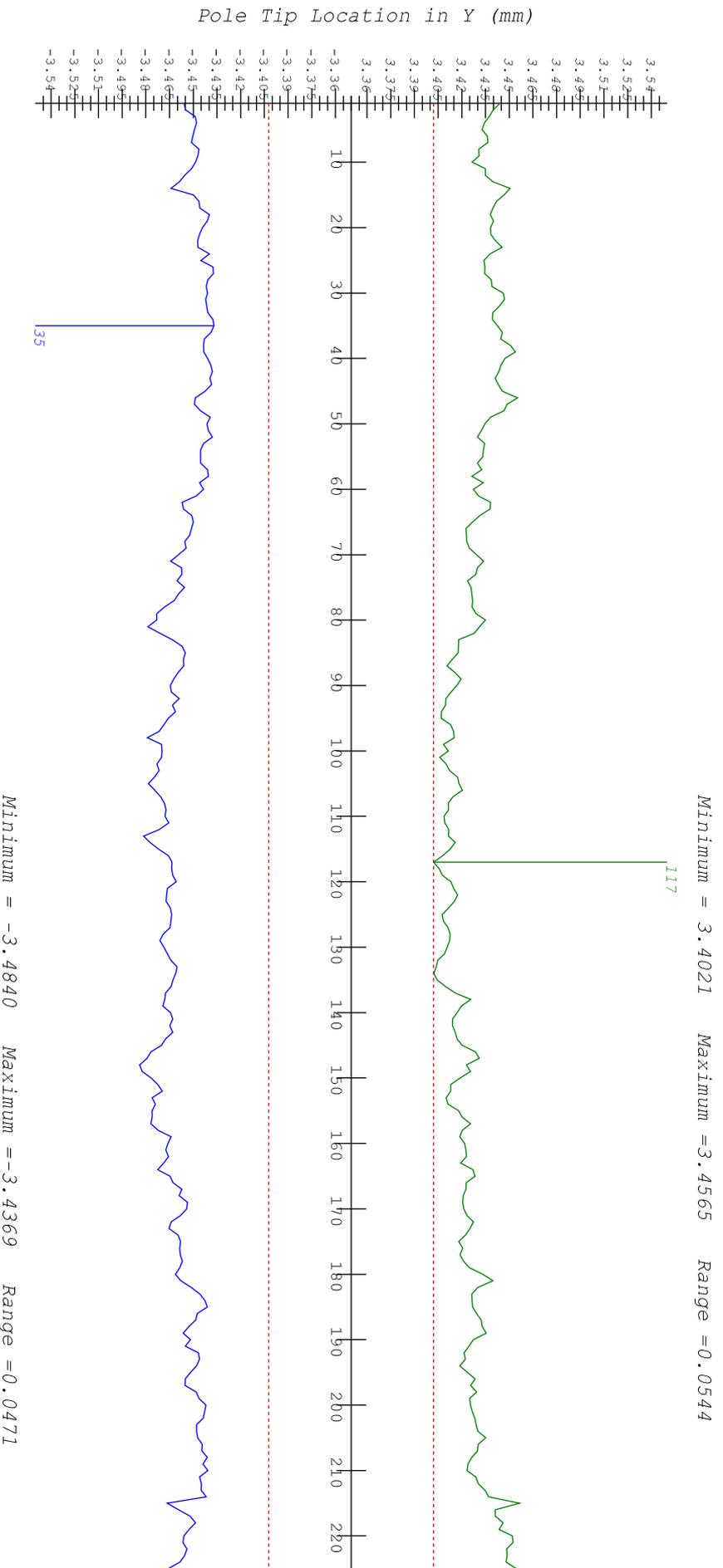
Symmetry Point is the symmetry point between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C\L  
 Broken Red line is Mean Value of Symmetry Points  
 Distance Between Tips is the distance between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C\L



Undulator Pole Tip Location  
 Post Magnetic Alignment

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Maximum Chamber Gap = 6.8042



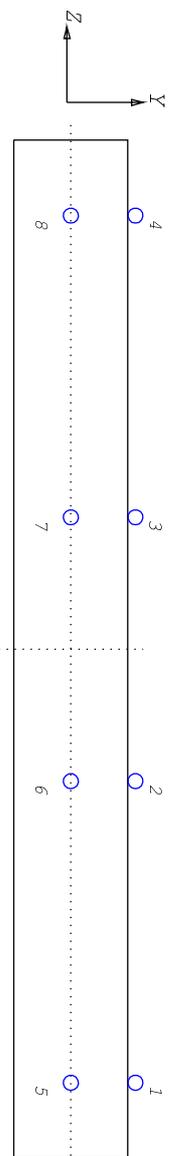
Pole Tip Number ----->

Green = The position of the Upper Pole Tips at Magnetic C\L  
Blue = The position of the Lower Pole Tips at Magnetic C\L  
Max. Chamber Gap = The maximum width vacuum chamber that will fit centered on the Magnetic C\L (2\*Min. Dev. from C\L)



Undulator Pole Tip Location  
Post Magnetic Alignment

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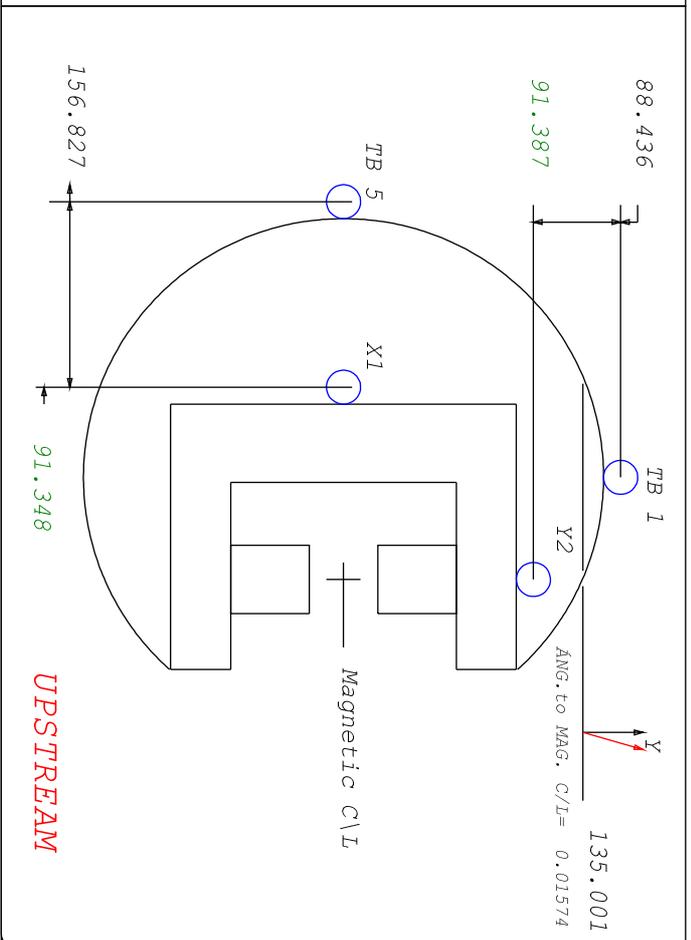
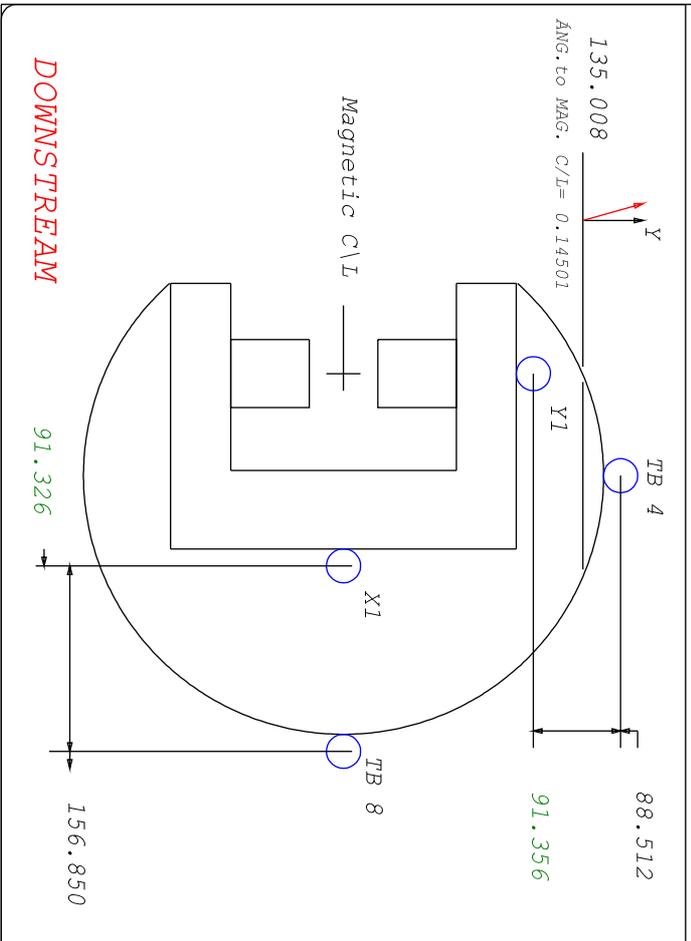
TOOLING BALL LOCATIONS

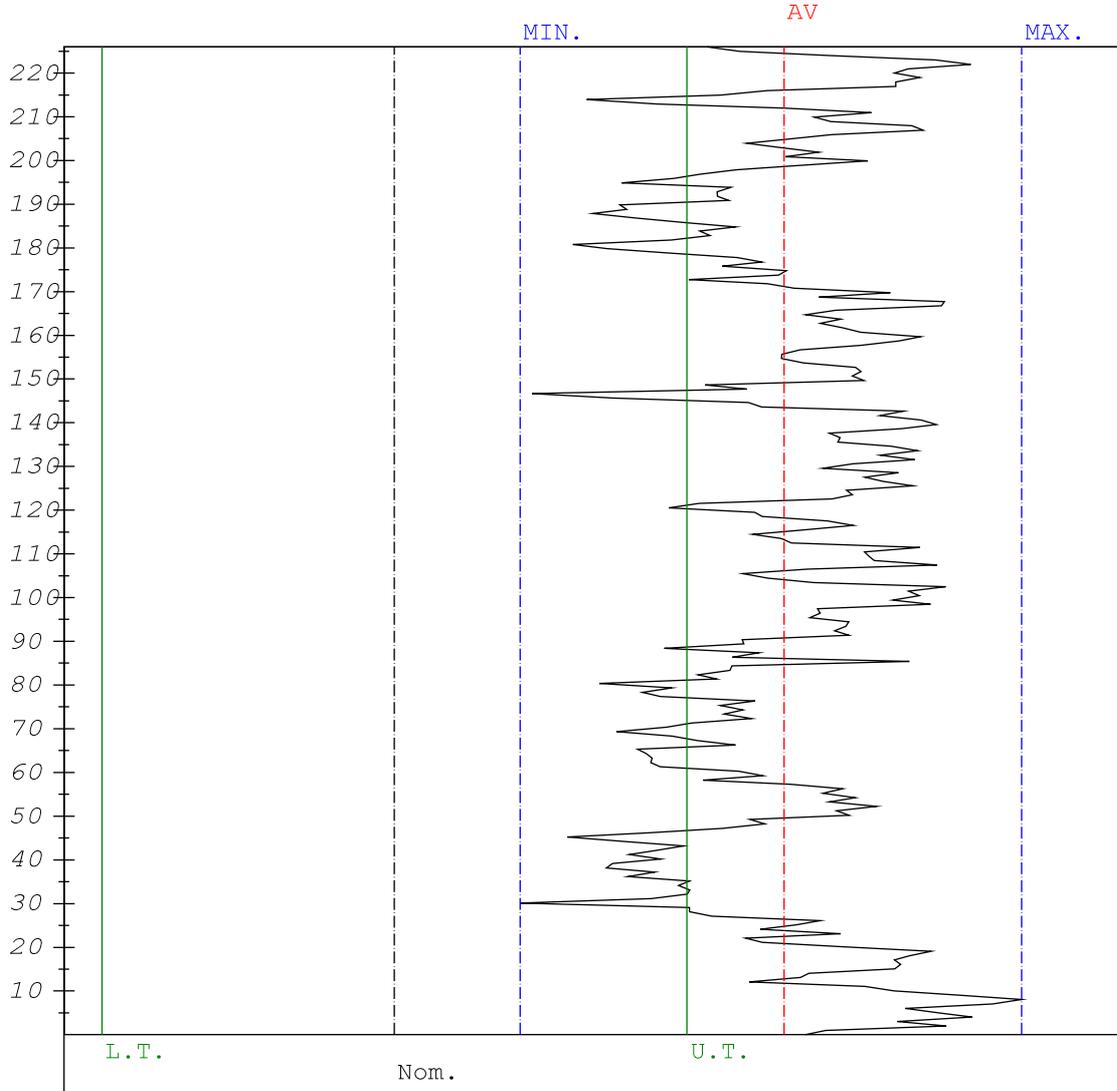
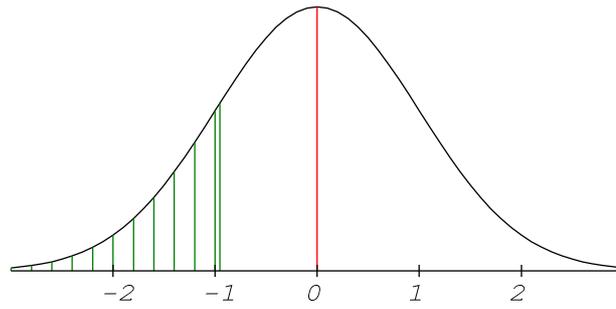
NUM.	X	Y	Z
1	-0.2062	179.8230	-1558.366
2	-0.0217	179.7322	-584.7394
3	-0.0157	179.7530	591.2006
4	0.0522	179.8682	1562.1085
5	248.1745	0.0991	-1558.294
6	248.2245	0.0341	-584.7553
7	248.1960	0.1011	591.3943
8	248.1758	0.0699	1562.2098

	C/L Offset	Length
Top Magnetic Structure	-0.052	3380.921
Bottom Magnetic Structure	0.052	3381.110
Strongback	0.316	3399.993

Dimensions in mm

Angles in mrad





Nominal : 4.5000	Averag : 5.1665	Cent.-Dev. : 0.6665
Up. Tol. : 0.5	Maximum : 5.5722	U.Tol.Ex. > : 83.0 %
Low.Tol. : -0.5	Minimum : 4.7149	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.1745	In Tolerance: 17.0 %
Outlier : 0	Distribution : NOR	Dimension : mrad



Statistical Evaluation  
 Pole Tip Gap Angle  
 Post Magnetic Alignment

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 PROGRAM VERSION 2.9