

TARGET: plot Tightening Torque (Mt) Vs Clamping force (FClamping)

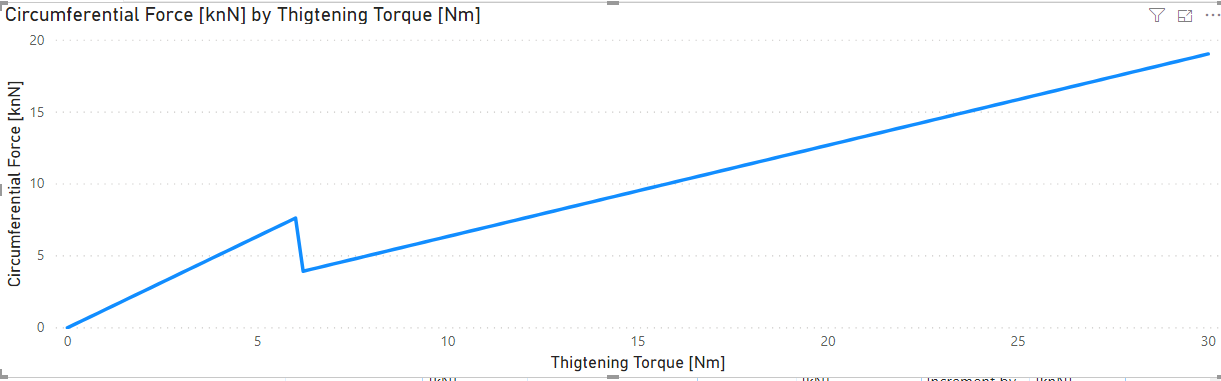
CHALLENGE:

to calculate the correct clamping force I need to calculate the CUMULATIVE of INCREMENTAL Screw force (ΔFS) and INCREMENTAL circumferential force (ΔFC)

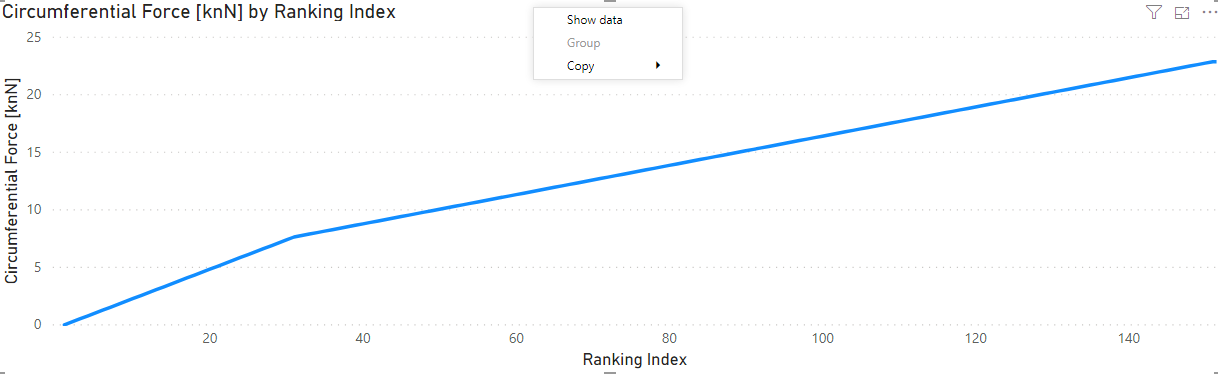
ΔFS = Fs j – Fs j-1 (“j” = ranking index = tightening torque ranking. For these reasons I need a ranking index)

PROBLEM: the calculation is correct if I plot it over the ranking index and is wrong if I plot it over the tightening torque

WRONG



CORRECT



Formulas are below

“Screw Force” at “j” Torque level where 0 <= j <= 200

Circumferential Force at “j” Torque

Before head contact condition

After head contact condition

Radial Force at “j” Torque

Clamping force at “j” torque