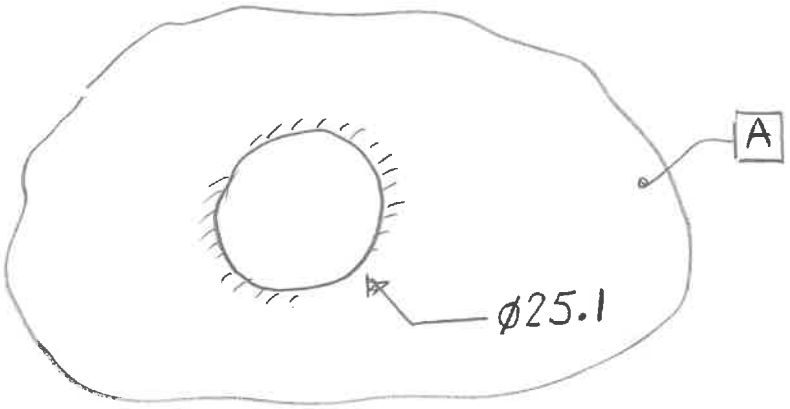
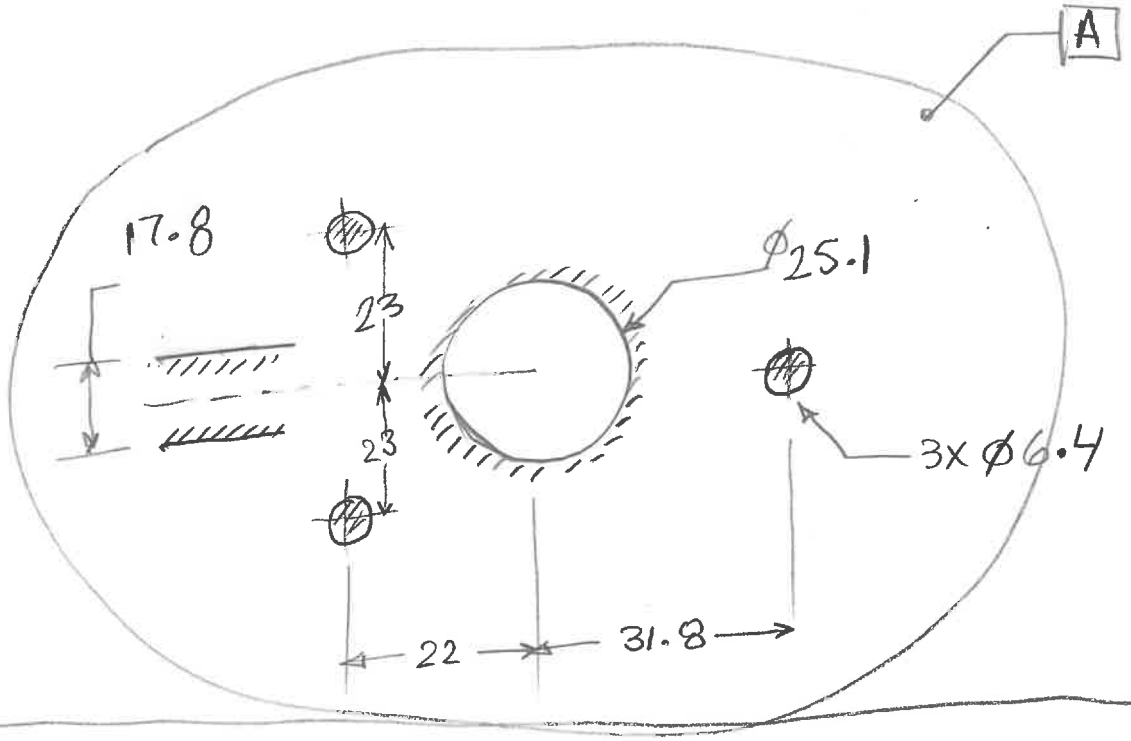
#1)

2D gages

#2)



#3)



~~#4)~~ 3X ϕ 6.4 – 7.0

#5) Bearing bore $15^{0}_{-0.008}$

15H7/m6 using LAF

$P_{min} = -0.023$

$P_{max} = +0.006$

$P_{min} = H_{min} - f_{max}$

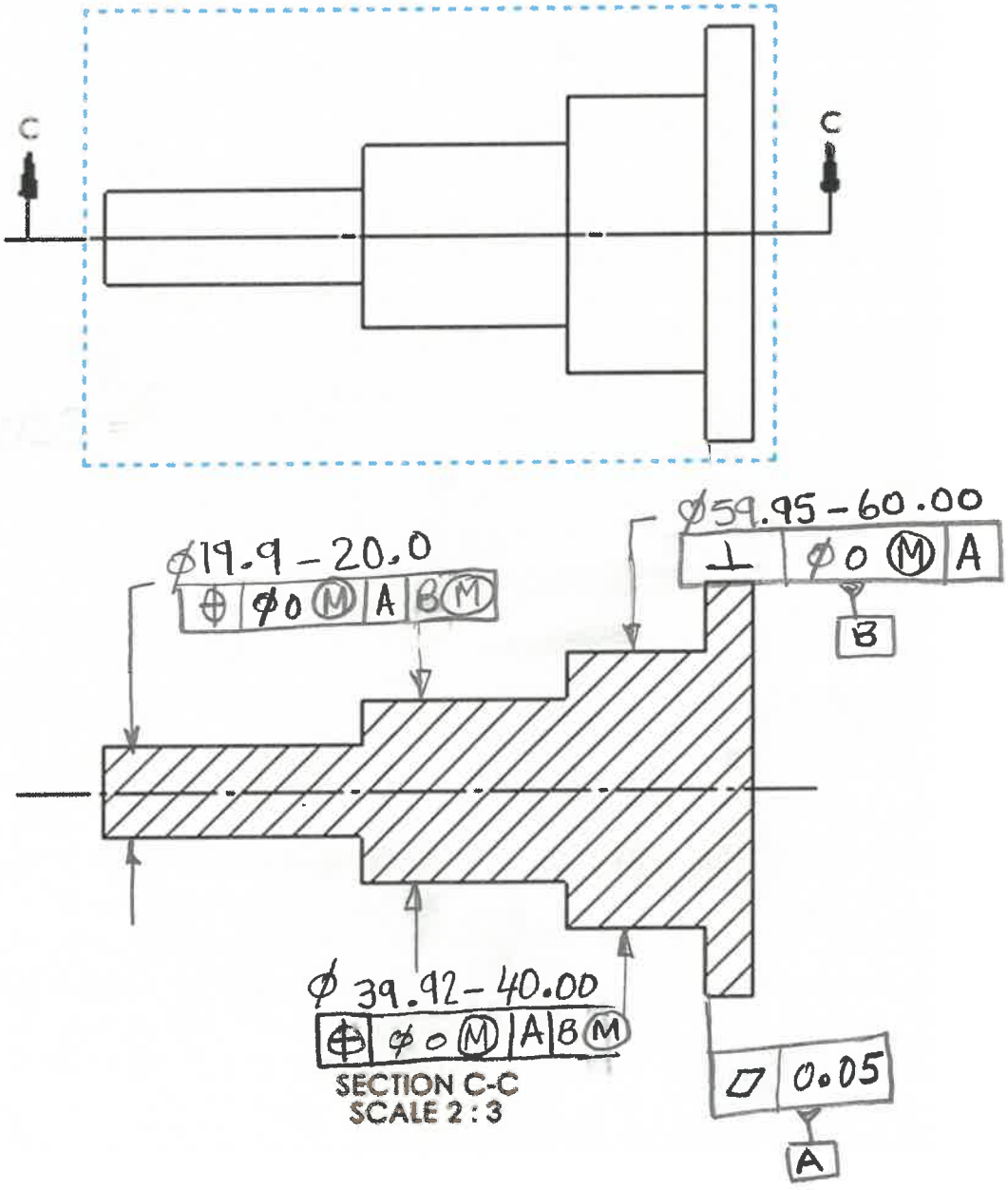
$-0.023 = (15 - 0.008) - F_{omax} \Rightarrow \boxed{F_{omax} = 15.015}$

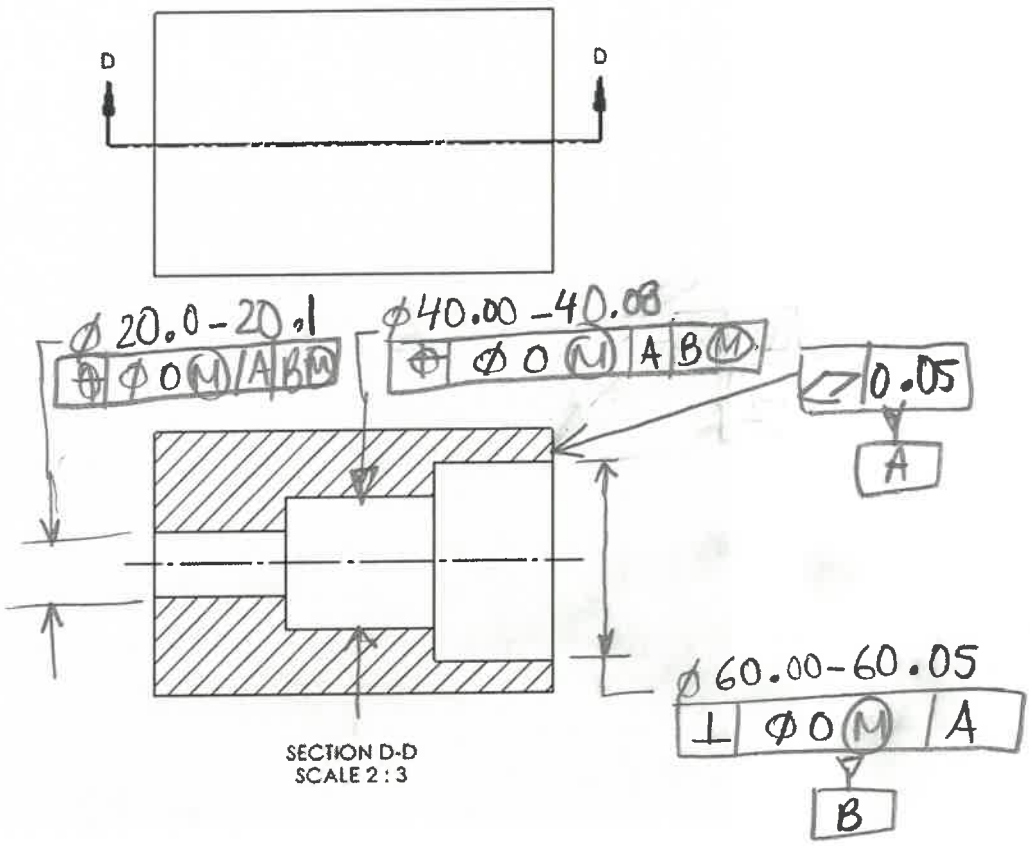
$P_{max} = H_{max} - F_{min}$

$0.006 = 15 - F_{min} \Rightarrow \boxed{F_{min} = 14.994}$

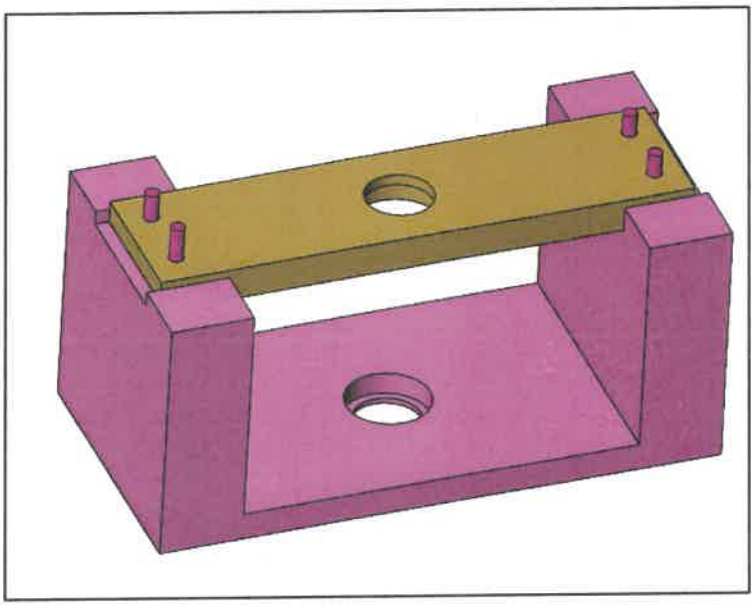
Set up tolerances for fit using the following information:

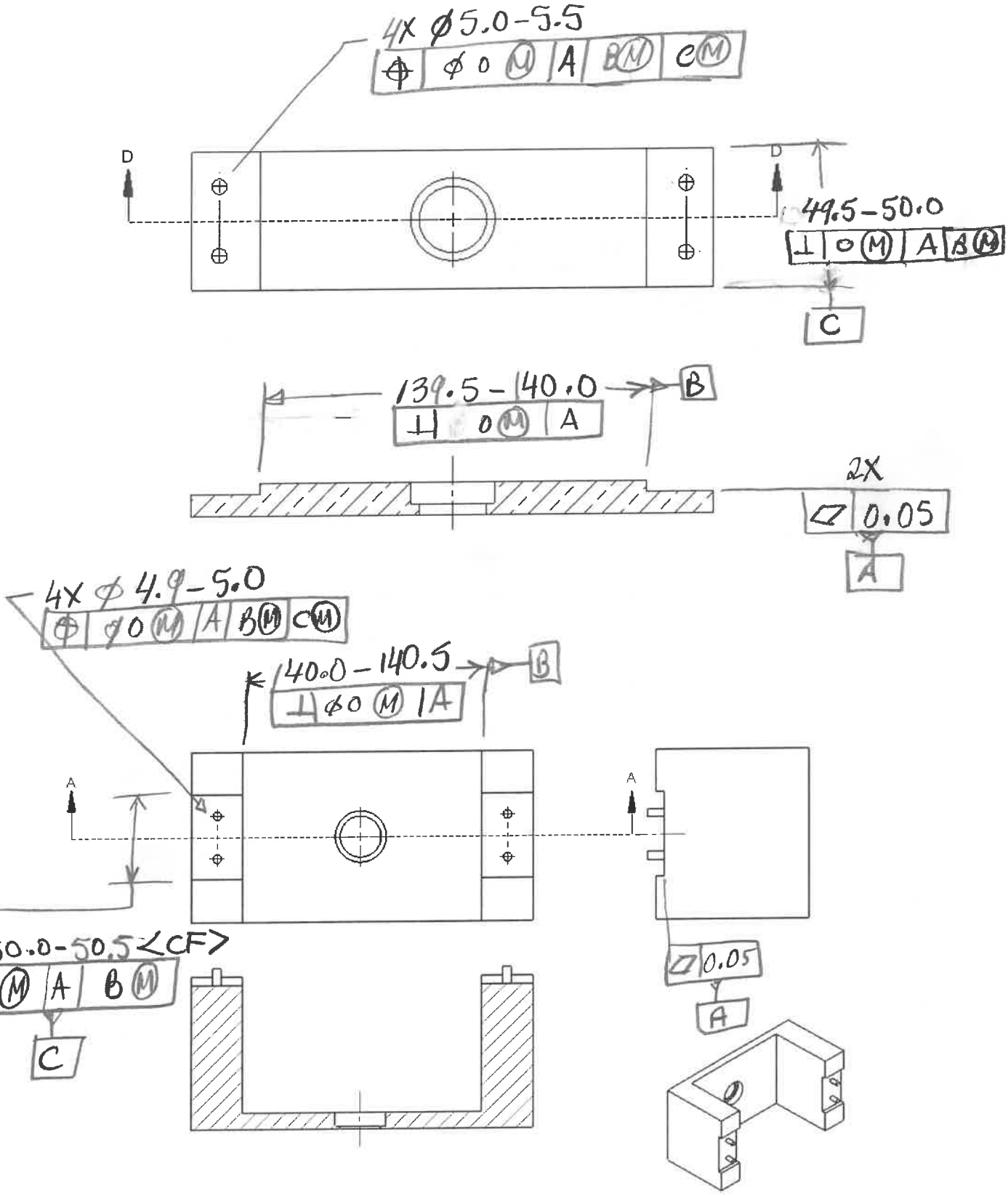
- The top planar surface makes full contact
- The fit between the largest cylinders has a $P_{min}=0$ and $P_{max} = 0.1$
- The fit between the middle cylinders has a $P_{min}=0$ and $P_{max} = 0.16$
- The fit between the smallest cylinders has a $P_{min}=0$ and $P_{max} = 0.2$
- The nominal sizes are 60, 40, and 20 mm.
- All size limits must border the nominal value – that means one limit of size must be equal to the nominal size.





7. Consider the fit of the two parts in the following assembly. The part drawings with basic dimensions is given in the following figures. The drawings without the dimensions are also given and you are to annotate them for fit. All fits must have a P_{min} of zero. The P_{max} for all fits must be 1 mm.




4X Ø5.0-5.5
⌖ Ø0 M A BM CM
D
D
49.5-50.0
⊥ 0 M A BM
C
139.5-140.0
B
⊥ 0 M A
2X
0.05
A
4X Ø4.9-5.0
⌖ Ø0 M A BM CM
40.0-140.5
B
⊥ Ø0 M A
A
A
50.0-50.5<CF>
⊥ 0 M A BM
C
0.05
A