Advanced Solid Modelling

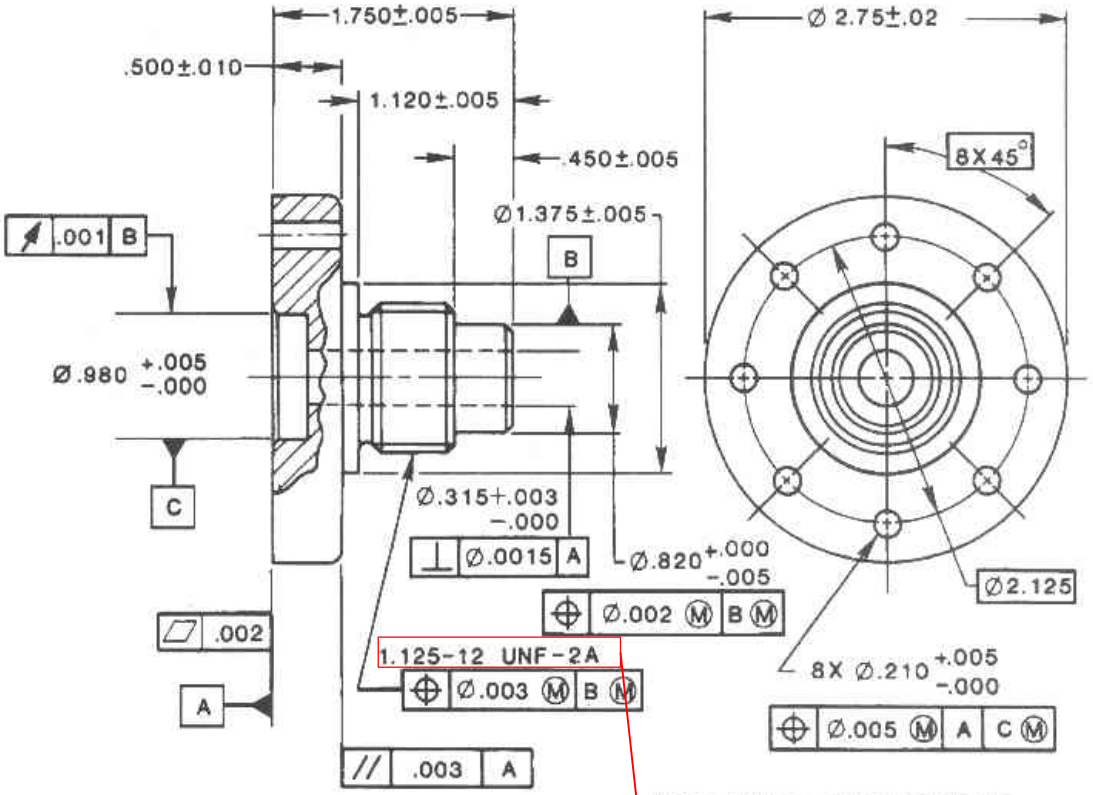
2D drawing/Tolerancing 6th Week

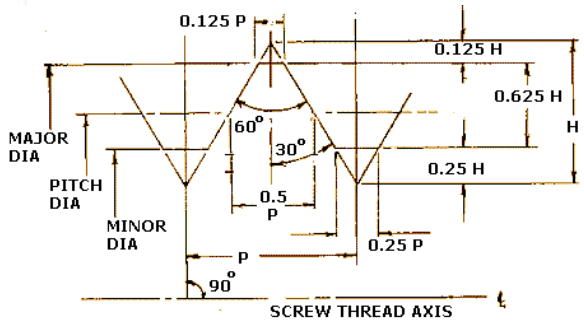
Department of Mechatronics Engineering

Prof. B. H. Kim

GD & T – Exercise

- Coupling boss



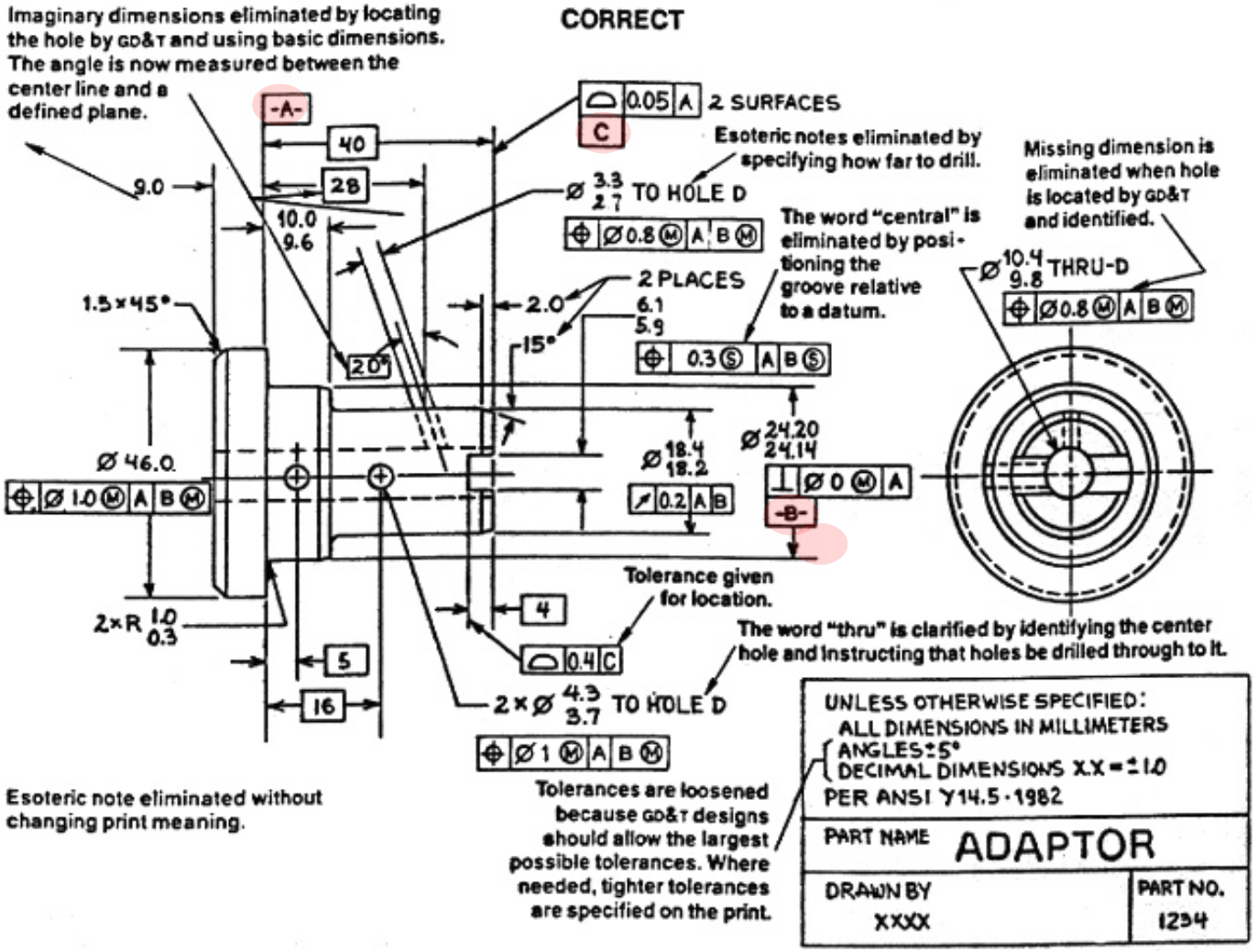


PROFILE OF UN AND UNF SCREW THREADS

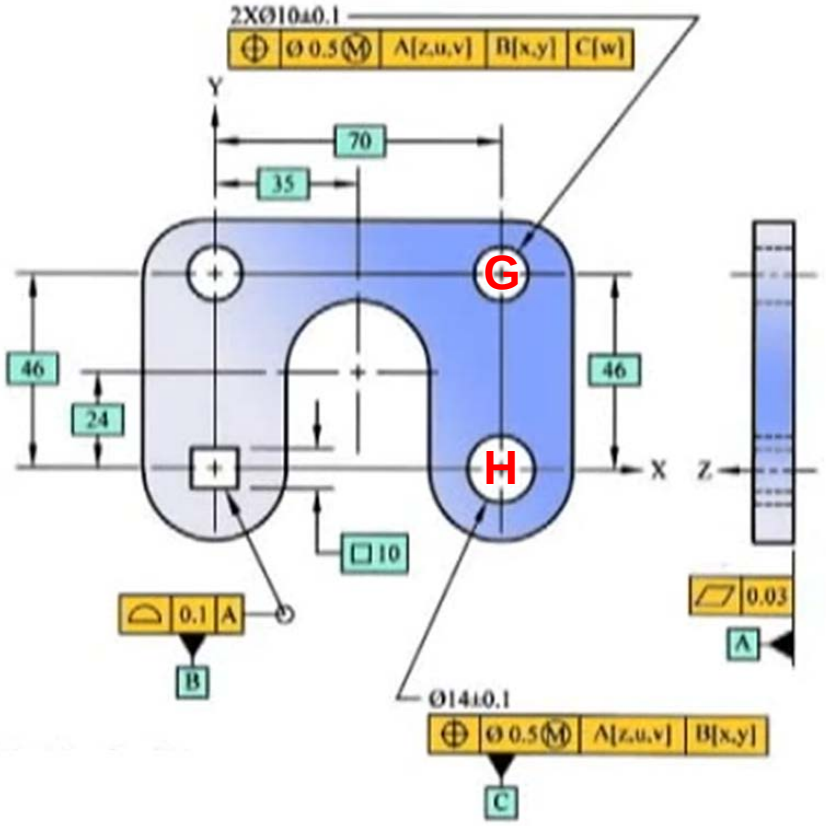
External Thread / Internal Thread								
Nominal Size, TPI, Series	Class	Allowance	Max[a] Major Max Minor	Min Major Min Minor	Min [b]	Max[a] Pitch	Min Pitch	UNR[c] Minor Dia Major Dia (Min)
$1^{1}/_{8}$-12 UNF	2A	0.0018	1.1232	1.1118	-	1.0691	1.0631	1.0240

GD & T – Exercise

- Adaptor



GD & T – Exercise



- **Datum A**
  - ✓ Flatness 0.03mm(or inch)
  - ✓ Usually put downward (ground)
- **About hole H**
  - ✓ At the MMC condition, the virtual size of the hole is calculated as 13.9 – 0.5 = 13.4mm
  - ✓ Overriding the spatial DOF
    [x y z] ➔ Translational DOF
    [u v w] ➔ Rotational DOF
    A[z, u, v] : 3 DOFs can be constrained by the datum plane A
    B(x,y): 2 DOFS can be constrained by the square pin
- **About hole G (datum C)**
  - ✓ virtual size of the hole = 9.4mm
  - ✓ Overriding the spatial DOF
    C[w] : 1 DOF can be constrained by the pin at **H**
- **About square hole (datum B)**
  - ✓ Profile of a surface < 0.1
  - ✓ Each squareness <0.1