



# Formes techniques



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## Modélisation 3D d'un solide



- Un solide 3D est modélisé par un ensemble de fonctions **ordonnées**.
- Chaque fonction dépend d'un certain nombre de paramètres

$$\text{Un Solide 3D} = \{f_1(P_1^1, P_1^2, \dots), f_2(P_2^1, P_2^2, \dots), \dots\}$$

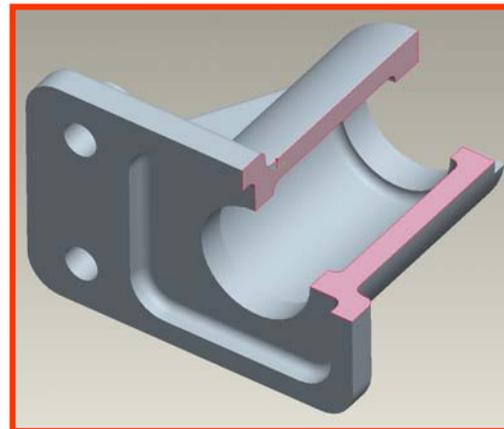
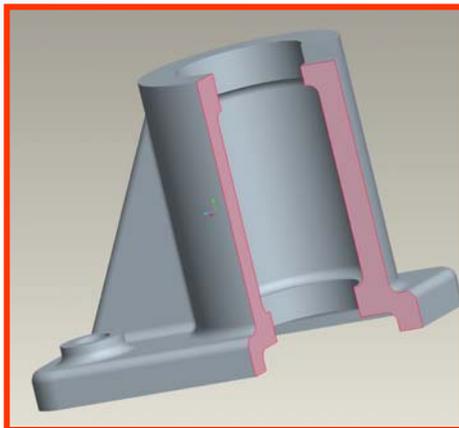
Unicité de l'objet Mais plusieurs façons de modéliser



## Conseils pour la modélisation des solides 3D



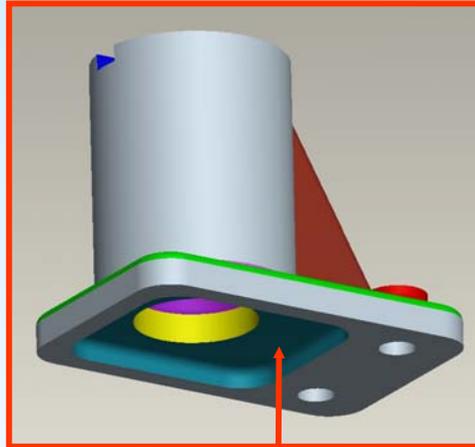
- Respecter la cotation
- Se rapprocher au maximum du procédé de fabrication
- Utiliser le maximum de fonction De base



Nécessité de reconnaître les formes techniques



# Formes Techniques



Évidement

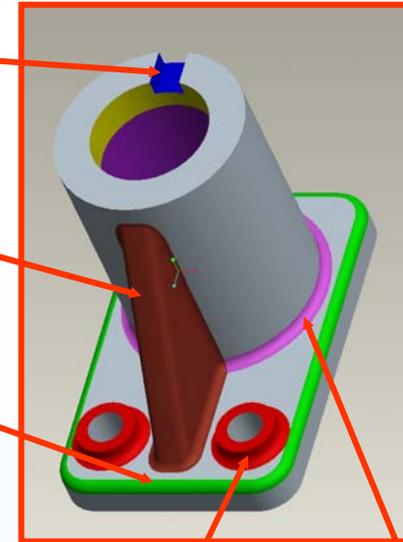
Chambrage

Rainure

Nervure

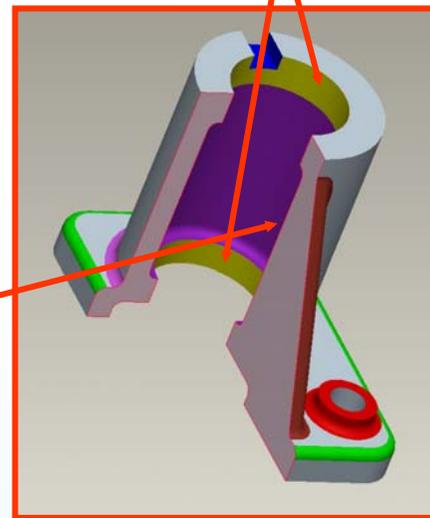
Arrondi

Alésage



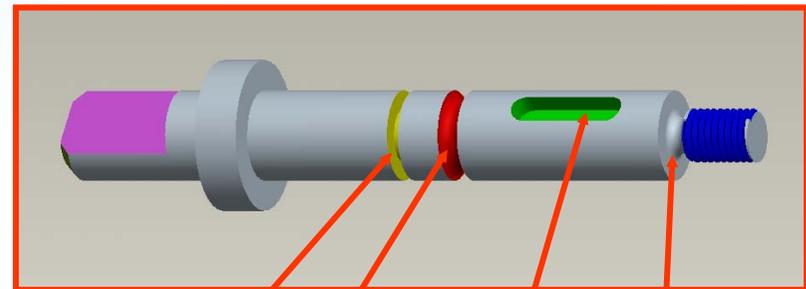
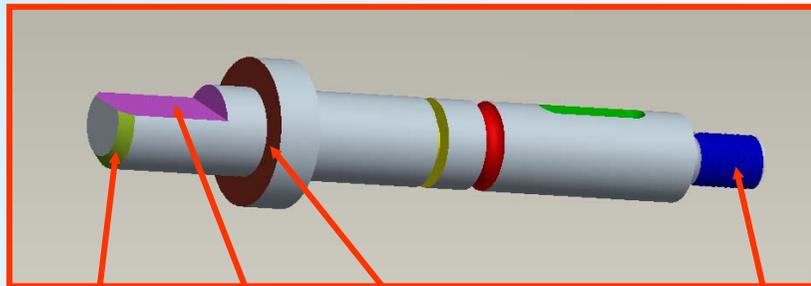
Bossage

Congé



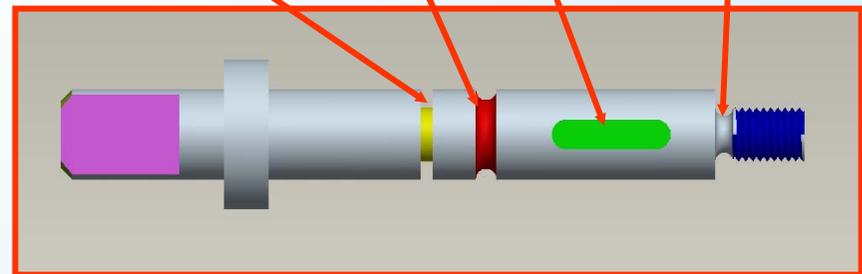
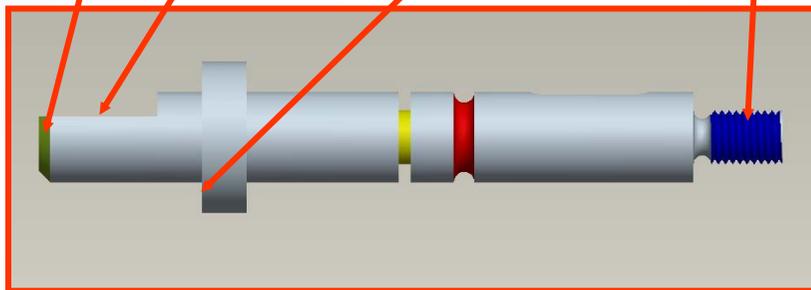


# Arbre



Chanfrein  
Méplat  
Épaulement  
Filetage

Saignée  
Gorge  
Rainure  
Dégagement

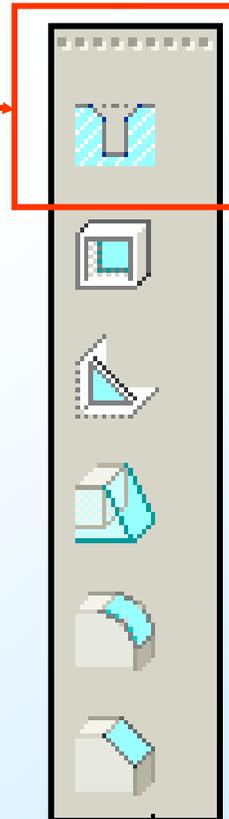




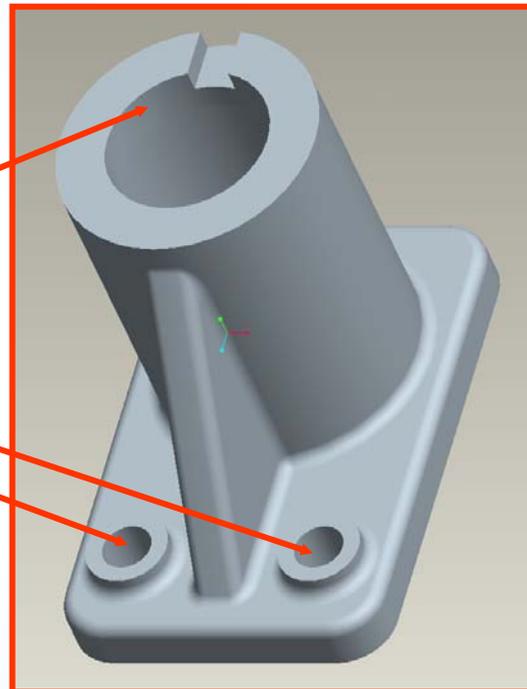
# Trou (Hole)



fonction associée à un trou ou à un alésage, cylindriques et de révolution



Trous lisses





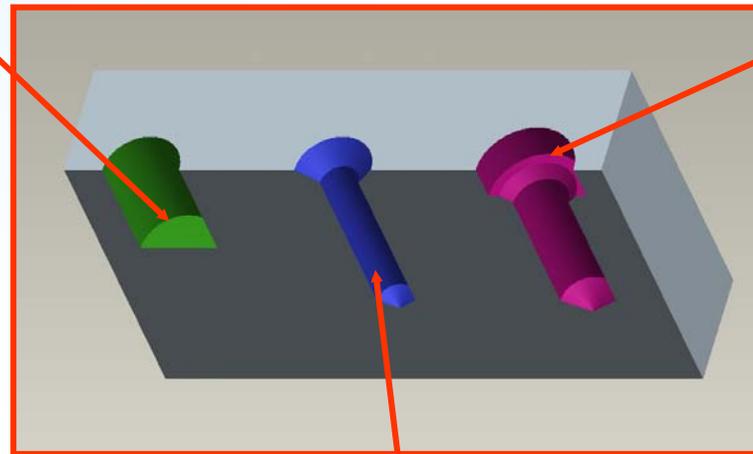
# Trou : Type



## Trou Lisse



## Trou Esquissé



## Trou standard





# Trou : Placement

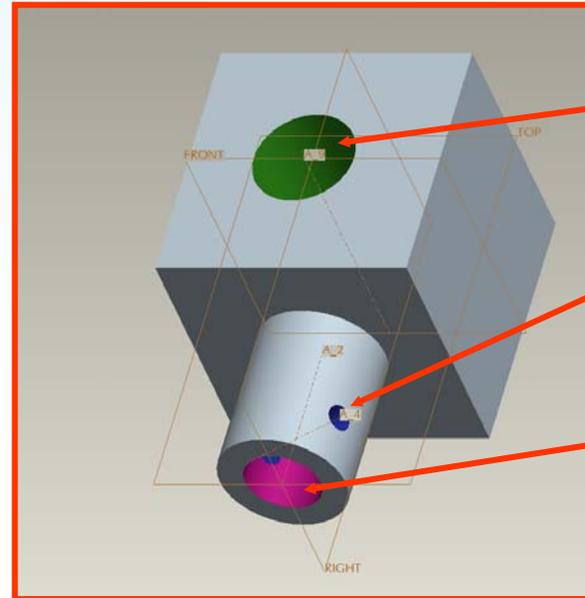


Primaire

Surf::F5(PROTF)    Inverser    Linéaire

Références secondaires

Surf::F5(PROT...	Décalage	-50.00	
Surf::F5(PROT...	Décalage	-50.00	



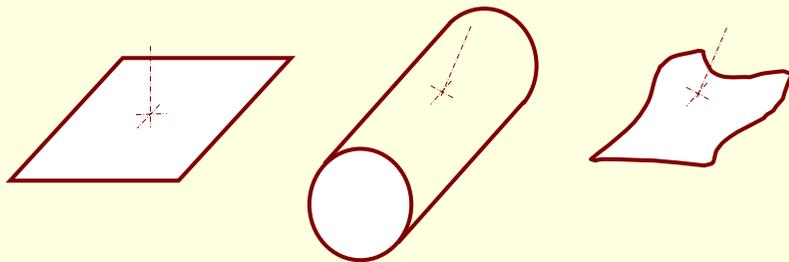
Linéaire

Radial

Coaxial

## Surface Primaire

surface sur laquelle est percé le trou



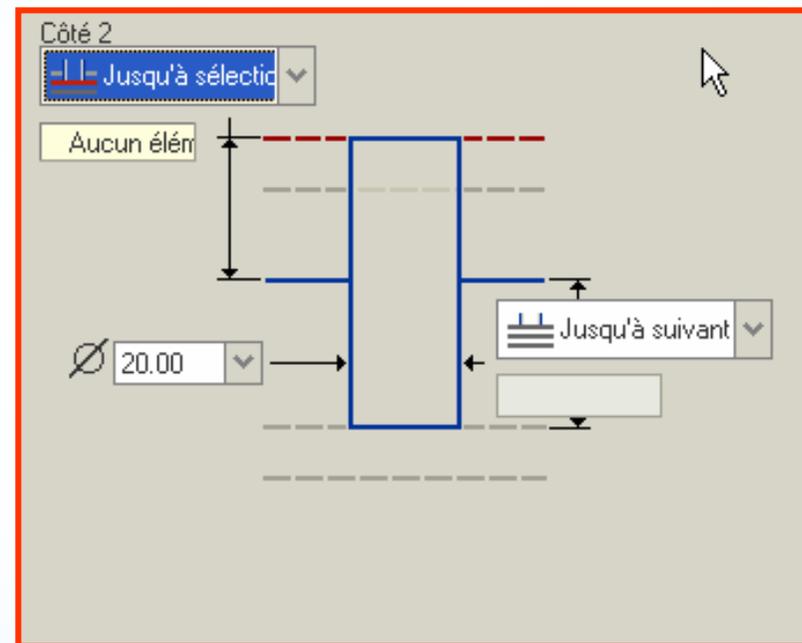
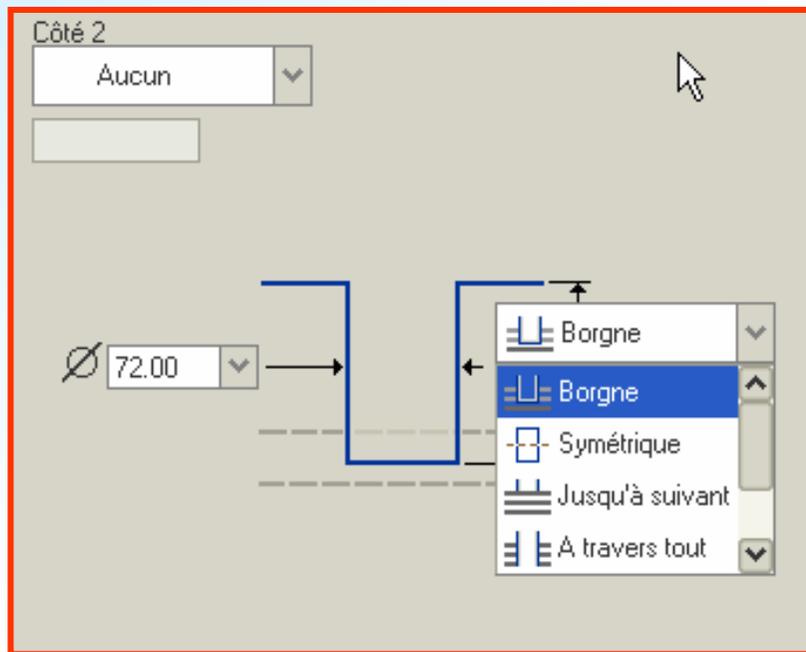
## Références secondaires

:Surfaces, axes, plans  
Fonctions du système de coordonnées

- Linéaire
- Radial
- Diamétrale
- Coaxial



# Trou : Profondeur



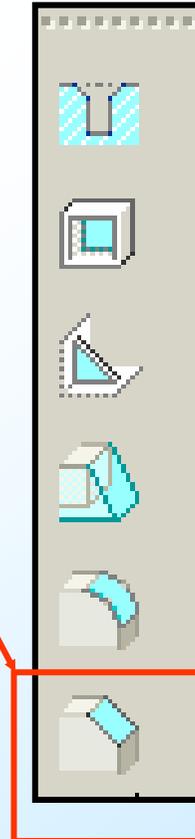
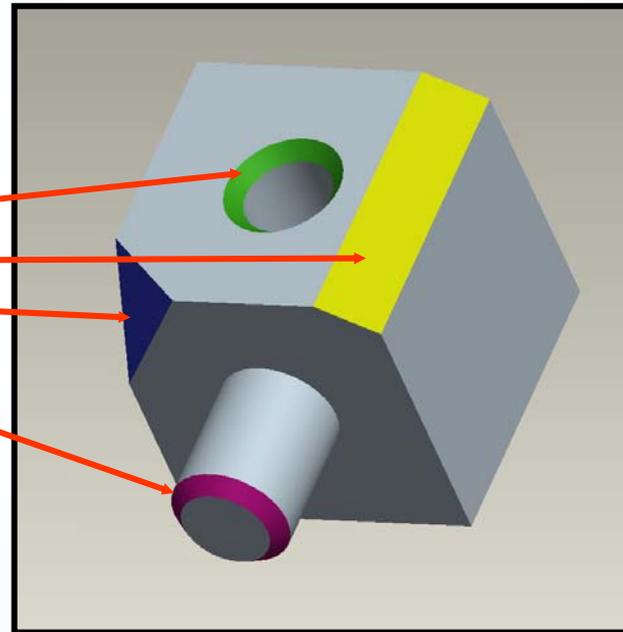


# Chanfrein



forme obtenue par enlèvement de matière, pour :  
« casser » un coin  
« casser » une arête  
faciliter un emmanchement  
assurer la sécurité

Chanfrein



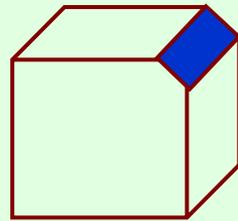


# Chanfrein : Type

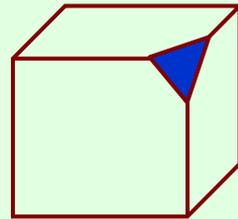


Fichier Edition Affichage Insertion Analyse Informations Applications Outils Fenêtre ?

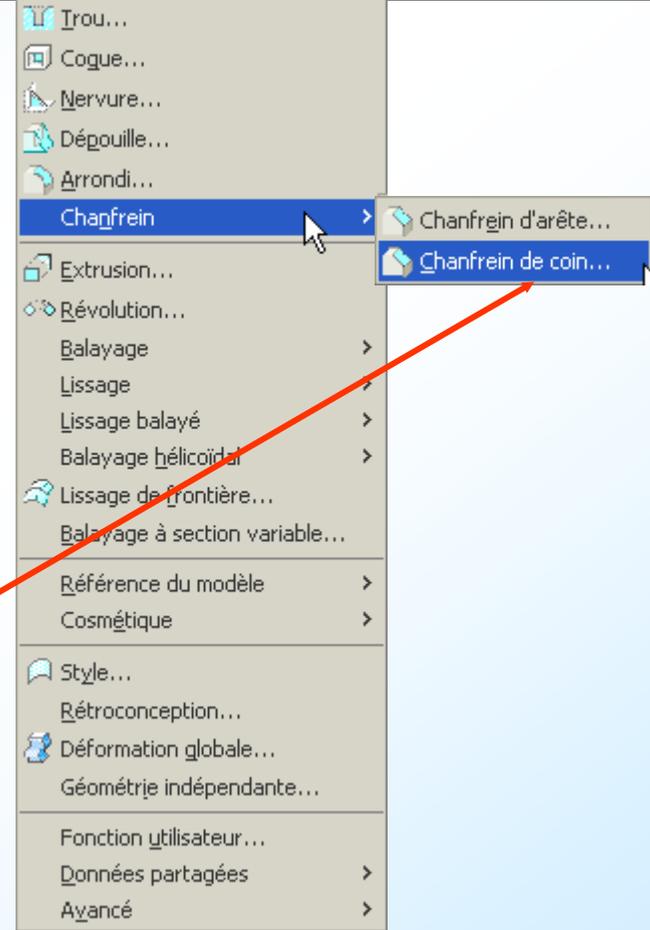
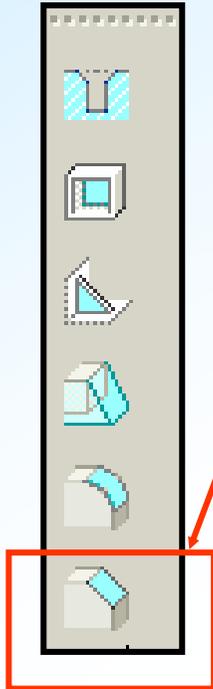
## 2 types de chanfreins



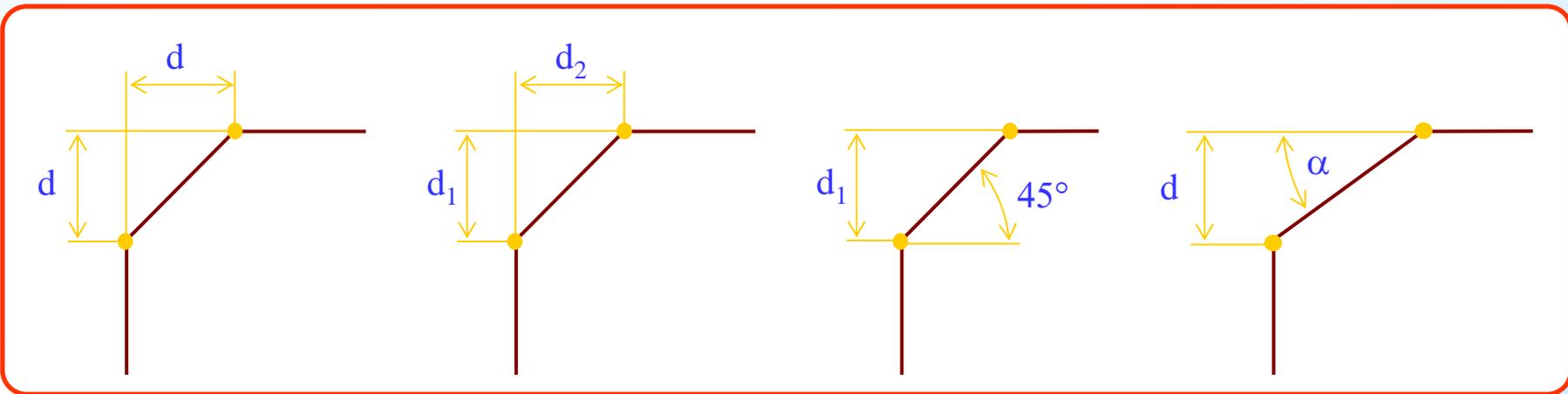
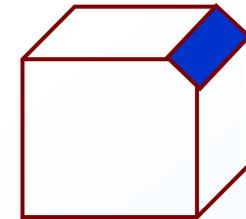
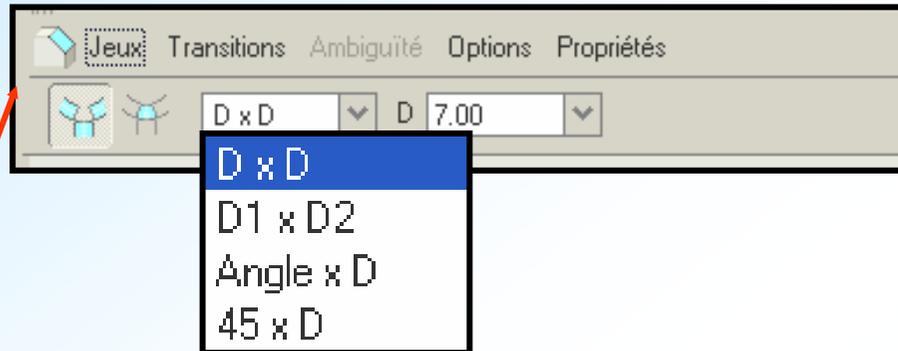
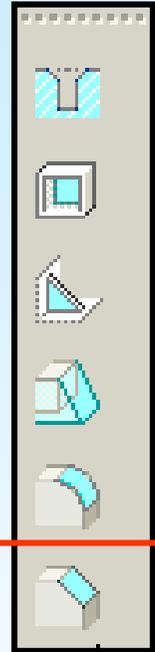
chanfrein d'arête (edge)



chanfrein de coin (corner)



# Chanfrein d'arête (edge)

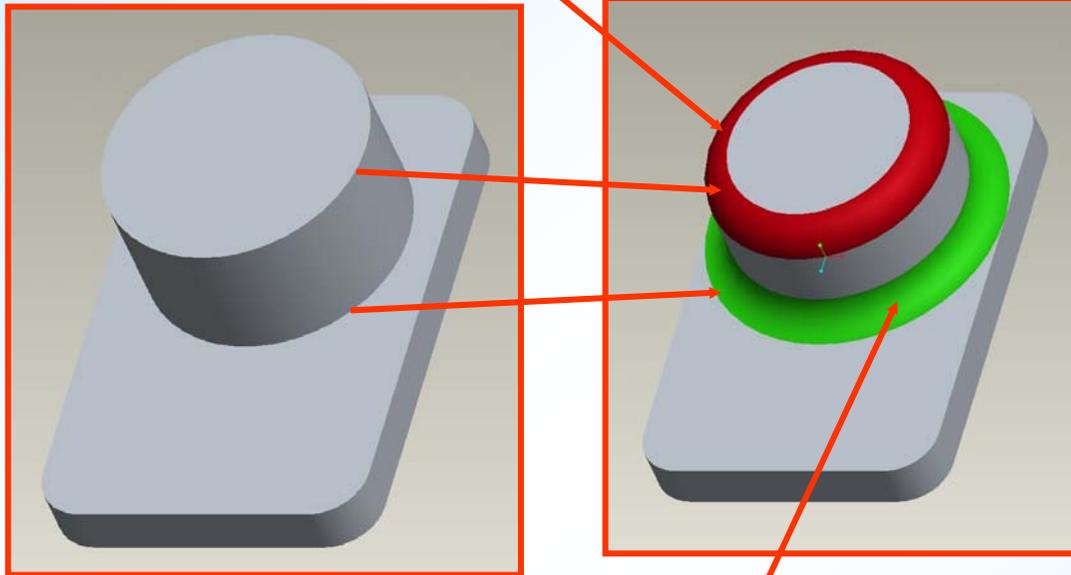




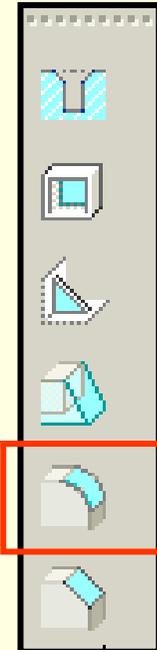
## Arrondi/Congé



**Arrondi** : Surface à section circulaire partielle destinée à supprimer une arête vive



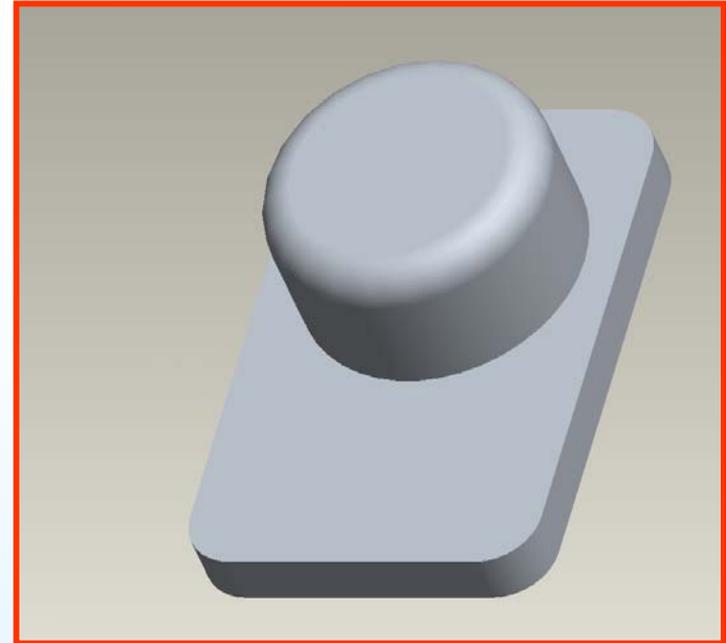
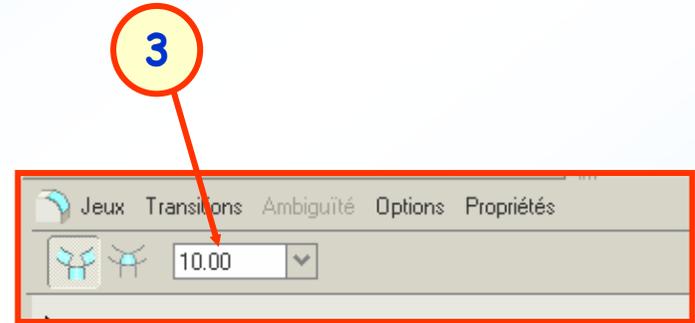
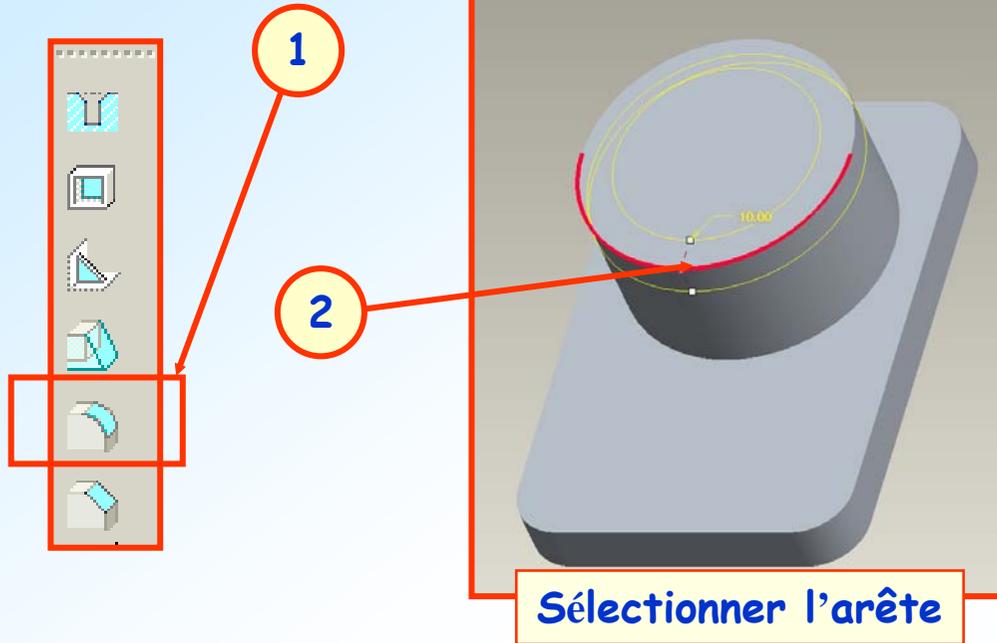
Arrondi/  
Congé



**Congé** : Surface à section circulaire partielle destinée à raccorder deux surfaces formant un angle rentrant.



# Arrondi/Congé

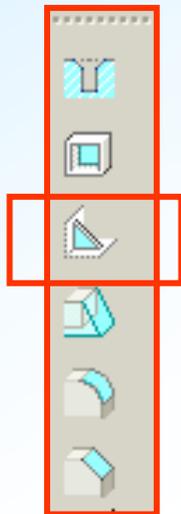




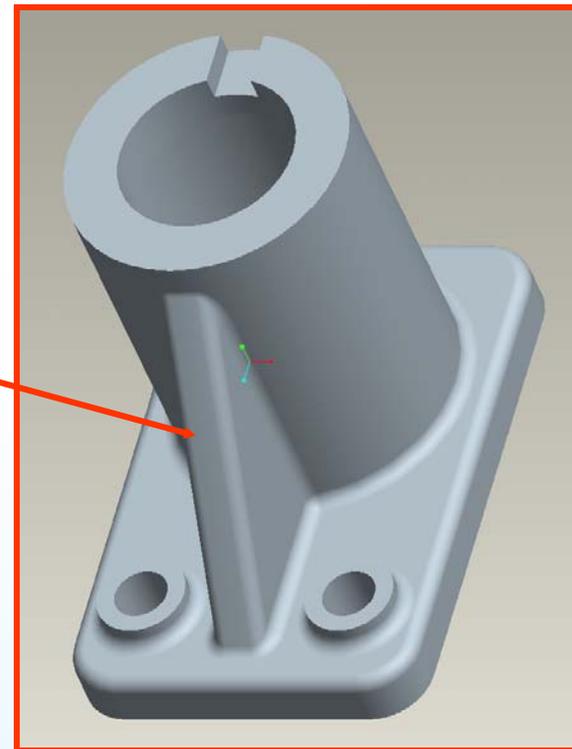
# Nervure



Partie saillante d'une pièce destinée à en augmenter la résistance ou la rigidité



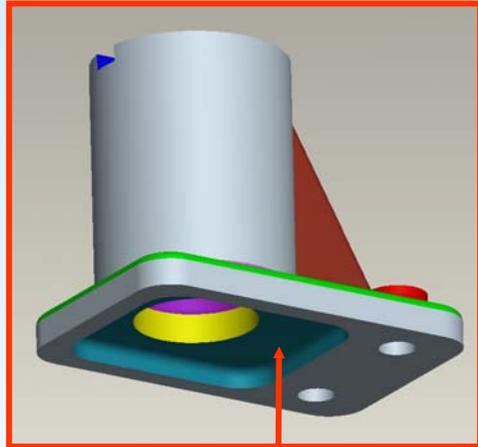
Nervure





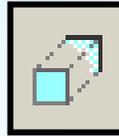


# Réalisation des formes techniques avec ProE



Évidement

Chambrage



Rainure



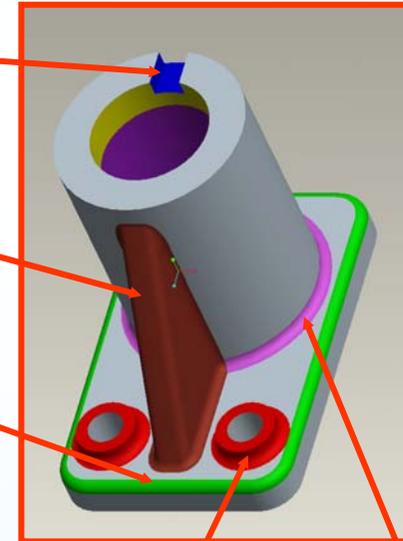
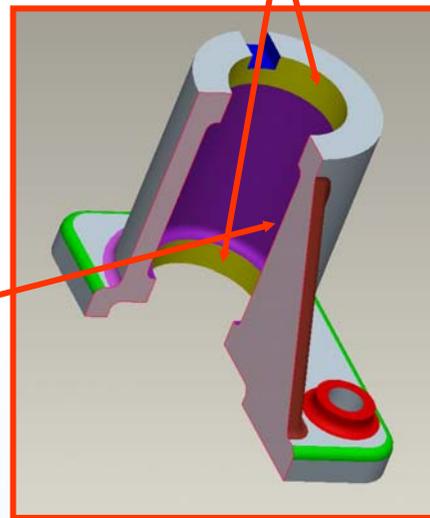
Nervure



Arrondi



Alésage

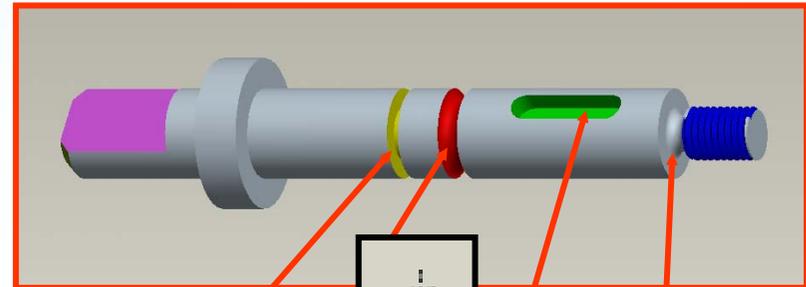
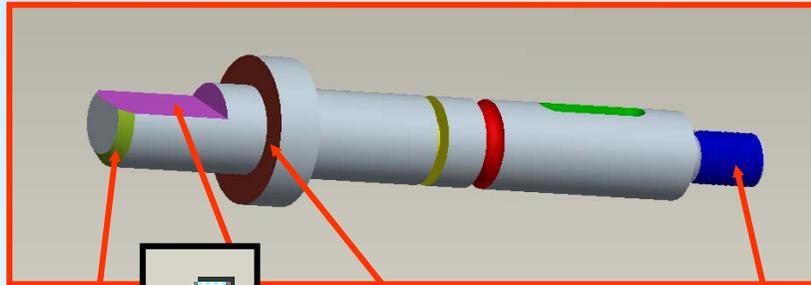


Bossage

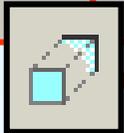
Congé



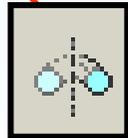
# Réalisation des formes techniques avec ProE



Chanfrein

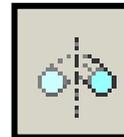


Méplat



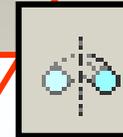
Épaulement

Filetage



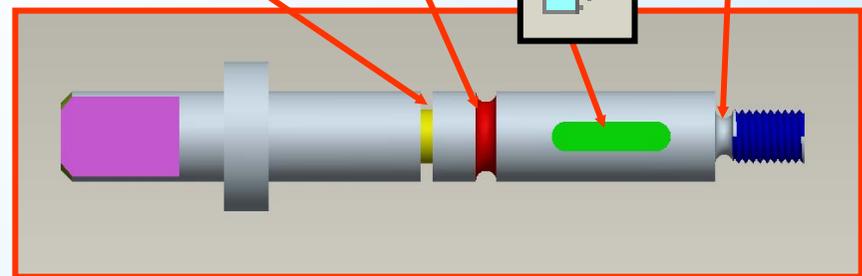
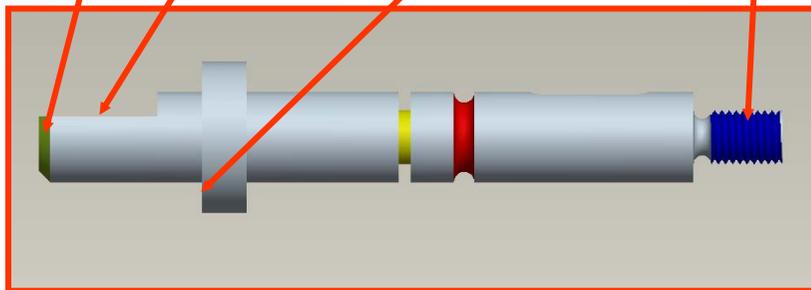
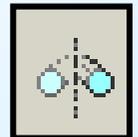
Saignée

Gorge



Rainure

Dégagement

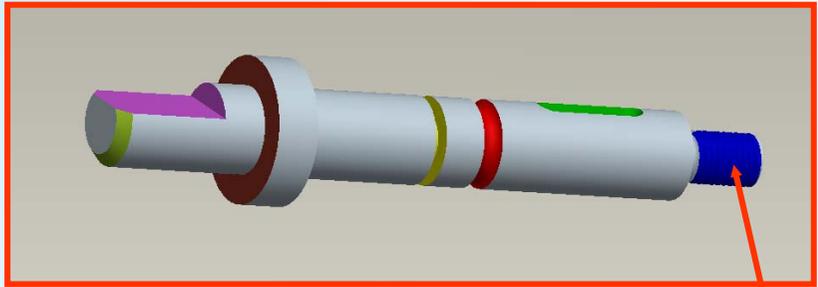




# Réalisation des formes techniques avec ProE



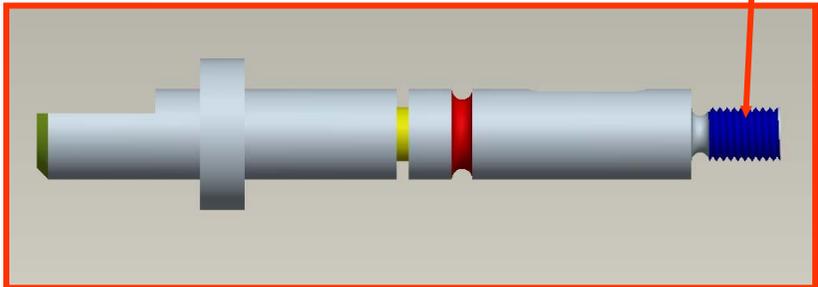
Fichier Edition Affichage Insertion Analyse Informations Applications Outils Fenêtre ?



Représentation réelle

Filetage

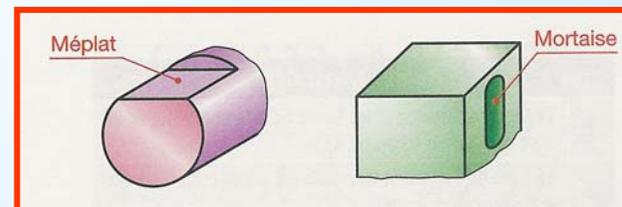
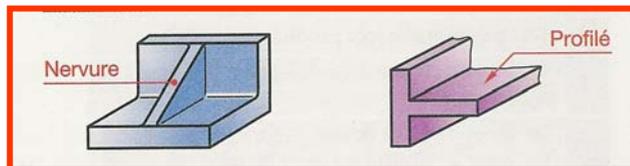
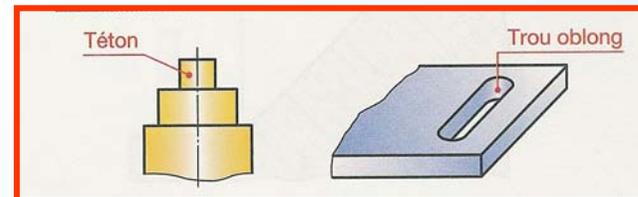
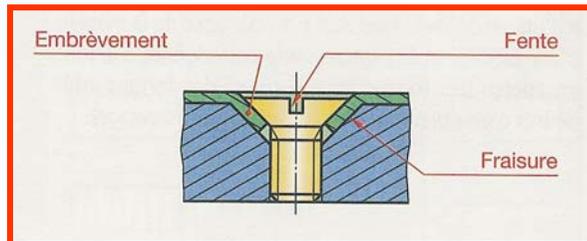
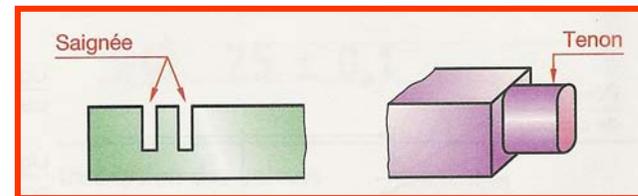
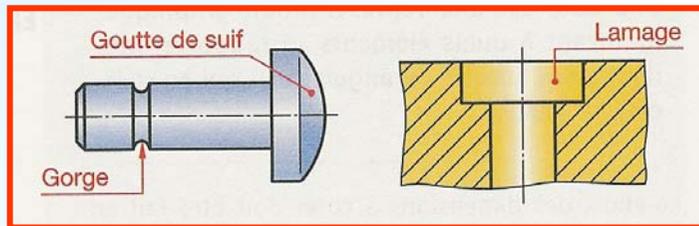
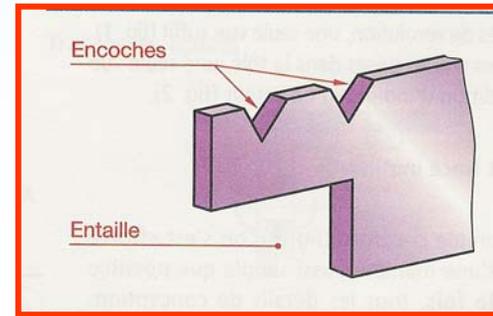
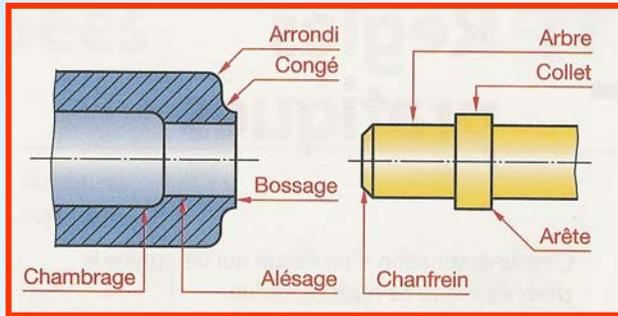
- Trou...
- Coque...
- Nervure...
- Dégouille...
- Arrondi...
- Chanfrein >
- Extrusion...
- Révolution...
- Balayage >
- Lissage >
- Lissage balayé >
- Balayage hélicoïdal >**
- Lissage de frontière...
- Balayage à section variable...
- Référence du modèle >
- Cosmétique >**
- Style...
- Rétroconception...
- Déformation globale...
- Géométrie indépendante...
- Fonction utilisateur...
- Données partagées >
- Avancé >



Représentation simplifiée



# Formes techniques





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