

Génération de surfaces

CI 3

1. LES OUTILS :

1.1. LE FRAISAGE :

La fraise à surfacer :



La fraise 2 tailles cylindrique :



Le foret à pointer :



Le foret :



L'alésoir :

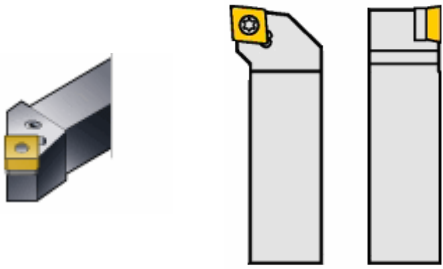


Le taraud :

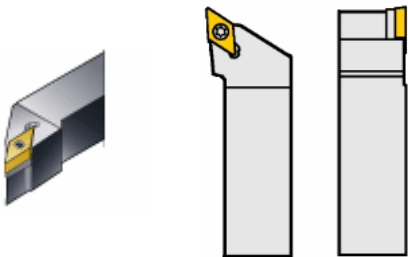


Génération de surfaces

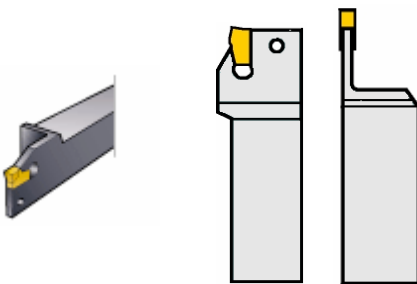
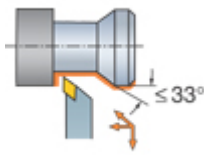
1.2. LE TOURNAGE :



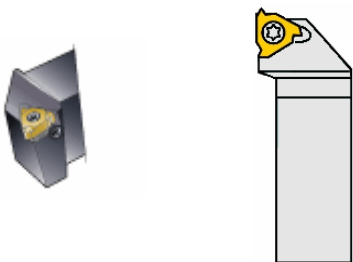
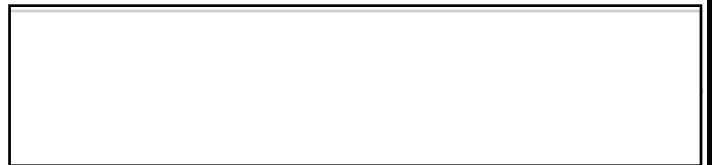
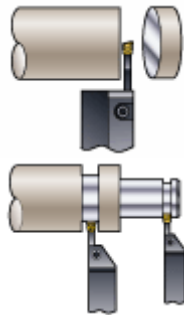
Ébauche :



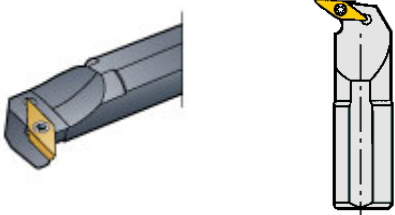
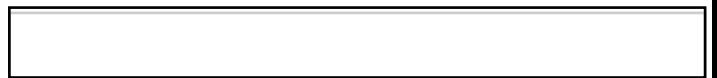
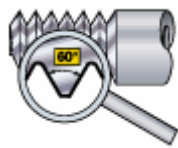
Finition :



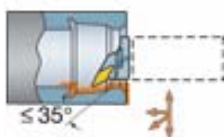
Tronçonnage et gorges :



Filetage :



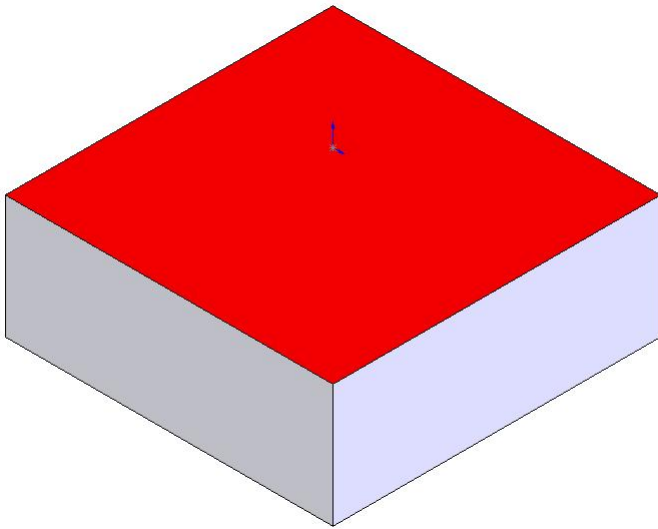
Alésage :



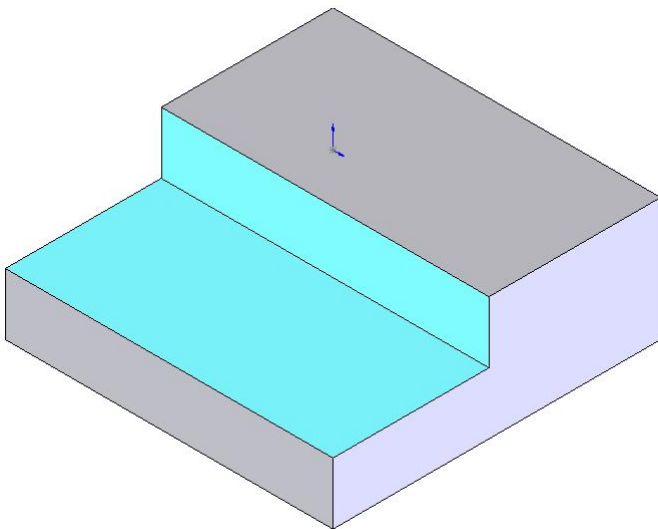
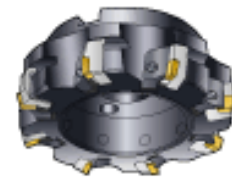
Génération de surfaces

2. LES OPÉRATIONS D'USINAGE :

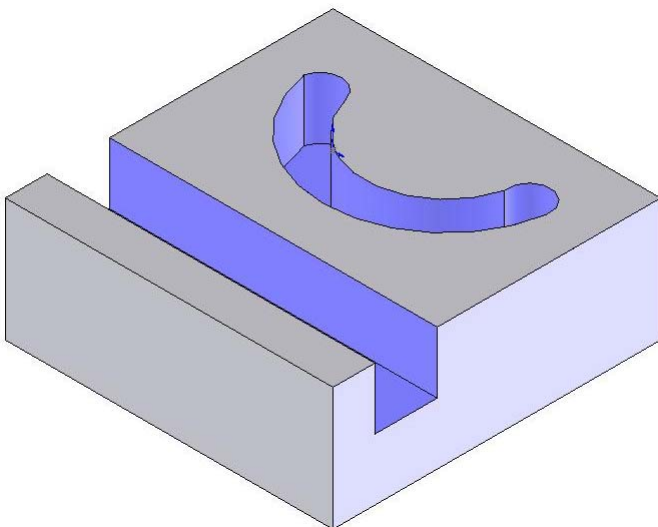
2.1 LE FRAISAGE :



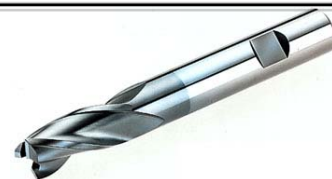
Surfaçage :



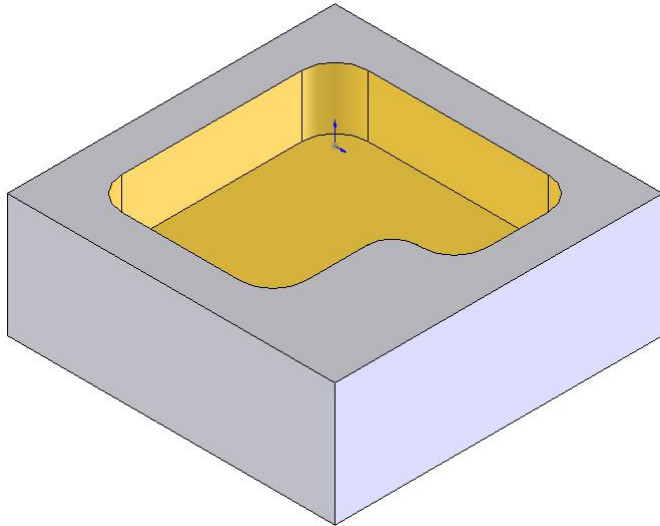
Épaulement :



Les rainures :



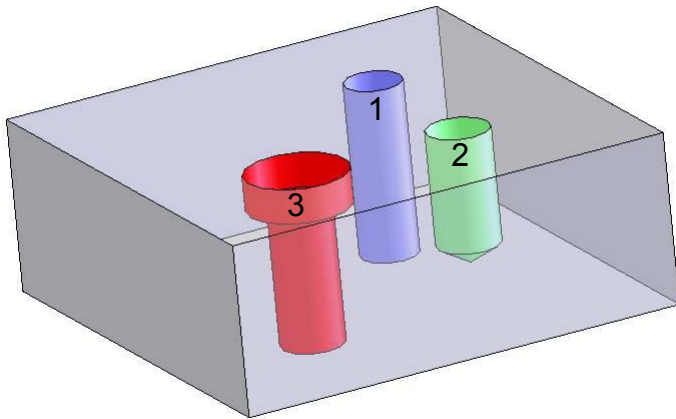
Génération de surfaces



Poche :

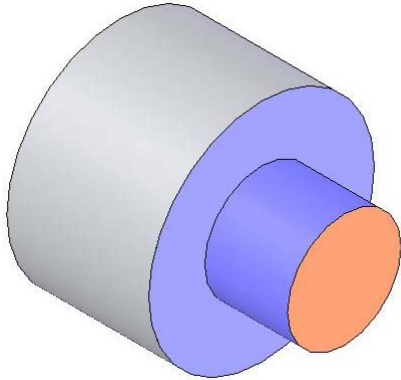


Perçage, Lamage, Alésage, taraudage:



Génération de surfaces

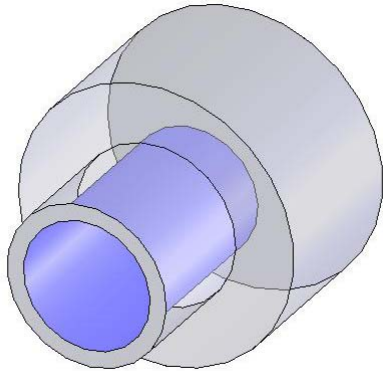
2.2 LE TOURNAGE :



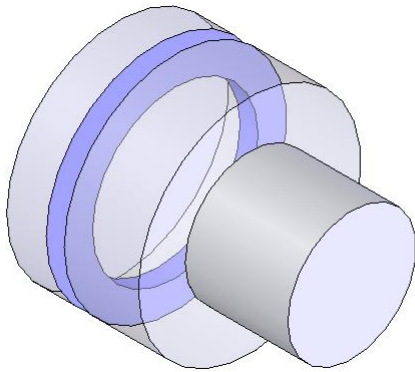
Dressage :

Chariotage :

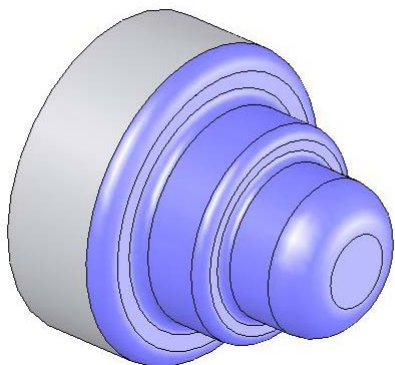
Épaulement :



Perçage :



Gorge :



Profilage :

Génération de surfaces

3. CONDITIONS DE COUPE :

3.1. LE TOURNAGE :

Matières	Rr Mpa	Outils A.R.S.					Outils Carbure				
		Ébauche			Finition		Ébauche			Finition	
		Vc m/min	a _p max mm	f mm/tr	Vc m/min	f mm/tr	Vc m/min	a _p max mm	f mm/tr	Vc m/min	f mm/tr
Acier S235	500	30	2	0.1	45	>0.04	150	2	0.2	250	>0.10
Acier INOX	500	27	2	0.1	32	>0.04	105	2	0.2	115	>0.10
Acier 35CD4	1100	20	2	0.1	28	>0.04	100	2	0.2	160	>0.10
PVC	60	90	4	0.3	150	>0.10	100	4	0.3	150	>0.20
Nylon PA6	80	90	2	0.2	120	>0.05	100	2	0.35	180	>0.12
Plexi PMMA	78	75	2	0.2	90	>0.10	100	2	0.25	150	>0.12
Laiton UZ30	400	70	1	0.3	110	>0.02	200	2	0.3	230	>0.10
Bronze UE12P	200	32	2	0.2	43	>0.02	90	2	0.3	120	>0.10
Alliage d'alu	280	200	2	0.3	250	>0.02	400	3	0.4	500	>0.10

Nota : Pour le tronçonnage et les gorges, prendre 50% des valeurs ci-dessus

3.2. LE FRAISAGE :

Fraisage en bout : Surfçage											
Matières	Rr Mpa	Outils A.R.S.					Outils Carbure				
		Ébauche			Finition		Ébauche			Finition	
		Vc m/min	a _p max mm	f mm/tr	Vc m/min	f mm/tr	Vc m/min	a _p max mm	f mm/tr	Vc m/min	f mm/tr
Acier S235	500	29	2	0.11	40	>0.06	100	2	0.2	120	>0.07
Acier INOX	500	18	2	0.08	22	>0.05	72	2	0.15	92	>0.07
Acier 35CD4	1100	20	2	0.06	25	>0.04	80	2	0.12	90	>0.07
PVC	60	200	4	0.2	300	>0.50	800	4	0.3	1 000	>0.07
Nylon PA6	80	100	2	0.15	200	>0.20	400	2	0.35	500	>0.07
Plexi PMMA	78	60	2	0.15	80	>0.20					
Laiton UZ30	400	72	1	0.09	95	>0.07	930	2	0.5	180	>0.16
Bronze UE12P	200	23	1	0.07	31	>0.06	60	2	0.2	82	>0.16
Alliage d'alu	280	150	1	0.07	190	>0.06	500	3	0.1	800	>0.08

Fraisage en roulant : Rainurage, Combiné...											
Matières	Rr Mpa	Outils A.R.S.					Outils Carbure				
		Ébauche			Finition		Ébauche			Finition	
		Vc m/min	a _p max mm	f mm/tr	Vc m/min	f mm/tr	Vc m/min	a _p max mm	f mm/tr	Vc m/min	f mm/tr
Acier S235	500	29	2	0.08	32	>0.05	100	2	0.15	120	>0.07
Acier INOX	500	18	2	0.06	28	>0.04	72	2	0.1	92	>0.07
Acier 35CD4	1100	20	2	0.04	24	>0.03	80	2	0.1	90	>0.07
PVC	60	200	4	0.15	300	>0.50	800	4	0.3	1 000	>0.07
Nylon PA6	80	100	2	0.10	200	>0.20	400	2	0.35	500	>0.07
Plexi PMMA	78	60	2	0.10	80	>0.20	200	2	0.1	300	>0.03
Laiton UZ30	400	72	1	0.16	95	>0.03	930	2	0.2	180	>0.1
Bronze UE12P	200	23	1	0.18	31	>0.03	60	2	0.1	82	>0.05
Alliage d'alu	280	150	1	0.07	190	>0.06	500	3	0.2	800	>0.08

Génération de surfaces

3.3. LE PERÇAGE :

Matières	Rr Mpa	Perçage			Alésage			Taraudage
		Vc m/min	Ø<10 f mm/tr	Ø>10 f mm/tr	Vc m/min	a _p max mm	f mm/tr	Vc m/min
Acier S235	500	25	0,025Ø	>0.06	12.5	>0.2	0.3	12
Acier INOX	500	20	0,02Ø	>0.04	8	>0.2	0.15	6
Acier 35CD4	1100	22	0,012Ø	>0.03	9	>0.2	0.17	10
PVC	60	60	0,02Ø					15
Nylon PA6	80	30	0,02Ø					15
Plexi PMMA	78	40	0,02Ø					10
Laiton UZ30	400	45	0,03Ø	>0.03	30	>0.2	0.4	13
BronzeUE12P	200	20	0,037Ø	>0.03	12	>0.2	0.9	7
Alliage d'alu	280	65	0,032Ø	>0.06	30	>0.2	0.4	18