

Z²



ORIGIN



DUPLEX



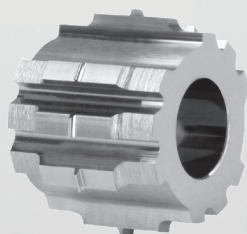
REVOLUTION



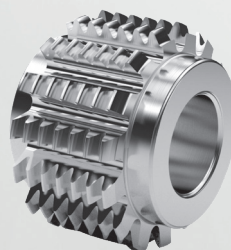
Gear cutting solutions



EF₂



TRINITY



8100



8700

Gear cutting solutions

Type	Name of tool	Standard modules*	Tool	Tool Machined part	Page
Tooth by tooth gear cutter	Z ²	m 0.03 - 1.00			5
Hobs for epicyclic & involute teeth	ORIGIN	m 0.015 - 1.000			6
		m 0.015 - 0.800			7
Two-way hob cutter	ORIGIN DUPLEX	m 0.015 - 1.000			8
		m 0.015 - 0.800			9

*Depends on the gearing norm
Other modules upon request

Gear cutting solutions

Type	Name of tool	Standard modules*	Tool	Tool Machined part	Page
Hobs for asymmetrical gears and special profiles	REVOLUTION	by profile			10
Hobs for frontal gear cutting	E₂F	m 0.05 - 0.50			11
Hobs for conical gears	TRINITY	m 0.05 - 0.30			12
Hob cutters for involute gears ISO53 / DIN867 DIN quality AAAA	8100	m 0.05 - 1.00			13
Skiving cutter for internal gear teeth	8700	m 0.05 - 1.00			14

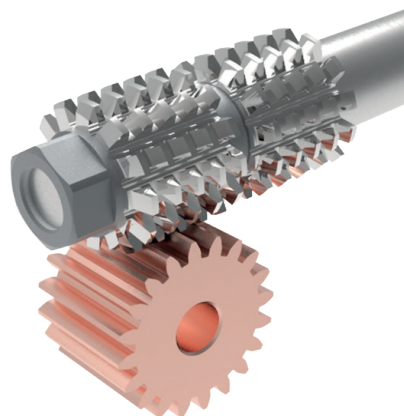
*Depends on the gearing norm
Other modules upon request

New

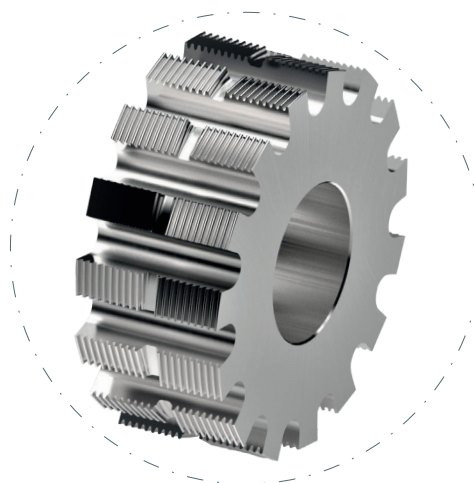
DUPLEX ORIGIN Hobs for epicyclic & involute teeth

Hobbing with two hob cutters is known to produce burr-free hobbing. It is a functional process, but requires a sometimes tedious start-up. It is necessary to make an adjustment for each hob, and the stacking of the arbor, tools and spacers results in a bad roundness and warping.

Louis Bélet SA has found a simple solution that can be used by everyone to solve these problems: ORIGIN DUPLEX hobs.



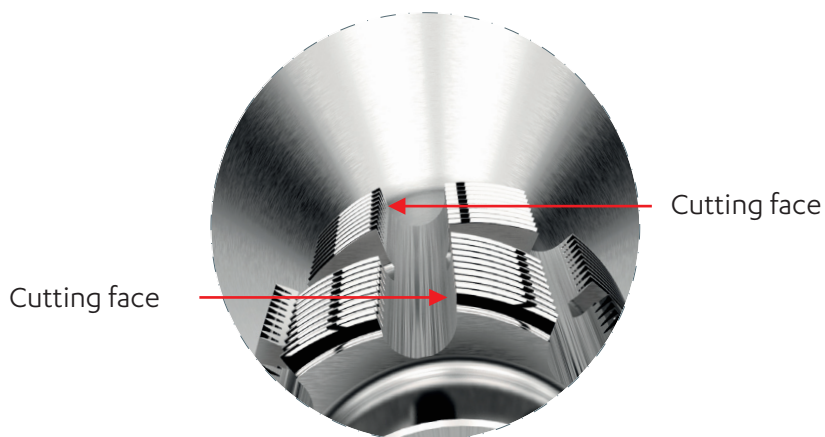
ORIGIN DUPLEX on a shank



Circular ORIGIN DUPLEX

Made of one-piece solid carbide, these cutters have two cutting areas, one on the right and one on the left. The two profiles are spaced a multiple of the pitch.

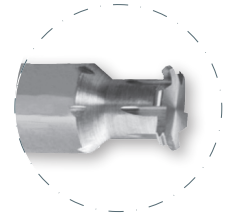
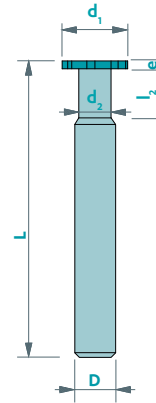
This simplifies the setting. In addition, roundness and axial warpage are greatly reduced.



Tooth by tooth gear cutter

Z²

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	■	TRIO (PO)
Steel Law 100X	70	90	■	■	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	■	SOLO (DA)
CuBe (copper alloys)	100	120	■	■	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	■	SOLO (DA)
Bronze	120	140	■	■	SOLO (DA)
Aluminium	200	220	■	■	SOLO (DA)
Titanium	80	90	■	-	-

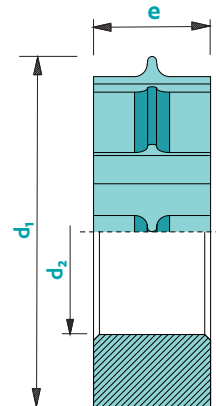


Tolerances D : h5

Standard modules: 0.030 - 1.000. Other modules upon request

d ₁	e	d ₂	l ₂	D	L	Z
<2	0.3 - 1.0	1.0	1	3	38	2 - 3
2	0.3 - 1.0	1.0	1	3	38	2 - 3
3	0.3 - 1.0	2.0	2	3	38	3
4	0.3 - 1.5	2.5	2	4	38	5
5	0.3 - 1.5	3.5	2	5	38	6
6	0.3 - 1.5	3.5	2	6	38	6
7	0.3 - 1.5	3.5	2	7	38	6
8	0.5 - 2.0	4.0	3	8	51	6
10	0.5 - 3.0	5.0	4	10	51	6
12	0.5 - 3.0	6.0	4	12	61	8
15	2.0 - 5.0	8.0	4	10	61	8
20	2.0 - 5.0	8.0	4	10	61	12
25	2.0 - 5.0	8.0	4	10	61	12

Option : circular saw



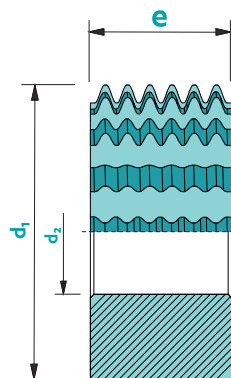
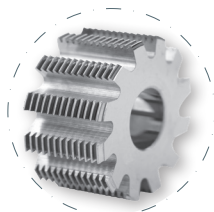
Available
uncoated or coated



Z
2-12

CARB

Hobs for epicyclic & involute teeth



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances d_1 : H3 e : +0/-0.01

Standard modules: 0.015 - 1.000. Other modules upon request

Available uncoated or coated	
	Z 12-15
	λ 0°
	Y 0°
	CARB

d_1	e	d_2	Z
6	4	3.5	12
6	5	3.5	12
6	6	3.5	12
8	4	3.5	12 / 15
8	5	3.5	12 / 15
8	6	3.5	12 / 15
8	6	4.5	12 / 15
8	8	4.5	12 / 15
10	4	3.5	12 / 15
10	4	4.0	12 / 15
10	4	4.5	12 / 15
10	5	3.5	12 / 15
10	6	3.5	12 / 15
10	5	4.5	12 / 15
10	6	4.5	12 / 15
12	6	3.5	15
12	5	4.5	15
12	6	4.5	15
12	8	4.5	15
12	10	4.5	15
12	6	5.0	15
12	8	5.0	15

d_1	e	d_2	Z
12	6	6.0	15
12	8	6.0	15
16	4	8.0	15
16	6	8.0	15
16	8	8.0	15
16	10	8.0	15
16	12	8.0	15
18	6	6.0	15
18	6	8.0	15
18	8	8.0	15
18	10	8.0	15
18	12	8.0	15
24	4	8.0	15
24	5	8.0	15
24	6	8.0	15
24	8	8.0	15
24	10	8.0	15
24	12	8.0	15
24	15	8.0	15
32	15	13.0	15

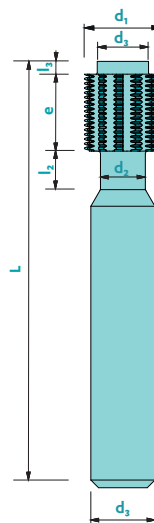
Gear cutting hob on a shank

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances D : H5

Standard modules: 0.015 - 0.800. Other modules upon request

d_1	e	d_2	l_2	D	L	Z	d_3	l_3
3.0	4	2.0	2	6	45	8	2.0	1
3.5	4	2.5	2	6	45	8	2.5	1
4.0	5	3.0	3	6	45	8	3.0	1
5.0	6	3.5	3	6	45	10	3.5	1
6.0	6	4.0	3	6	45	12	4.0	1
8.0	6	-	-	6	45	12	5.0	1
10.0	8	-	-	6	45	15	6.0	1
12.0	8	-	-	6	45	15	8.0	1
16.0	8	-	-	10	51	15	10.0	2
20.0	8	-	-	10	51	15	12.0	2



Available
uncoated or coated



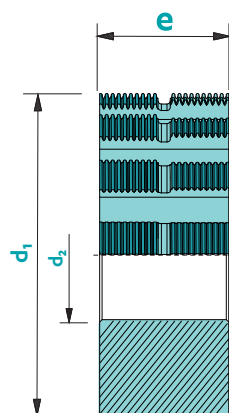
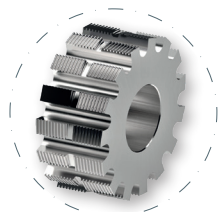
Z
8-15

λ
0°

γ
0°

CARB

Duplex hob cutter



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances d_1 : H3 e : +0/-0.01

Standard modules: 0.015 - 1.000. Other modules upon request

Available uncoated or coated	
	Z 12-15
λ 0°	γ 0°
CARB	

d_1	e	d_2	Z
6	5	3.5	12
6	6	3.5	12
8	5	3.5	12 / 15
8	6	3.5	12 / 15
8	6	4.5	12 / 15
8	8	4.5	12 / 15
10	5	3.5	12 / 15
10	6	3.5	12 / 15
10	5	4.5	12 / 15
10	6	4.5	12 / 15
12	6	3.5	15
12	5	4.5	15
12	6	4.5	15
12	8	4.5	15
12	10	4.5	15
12	6	5.0	15
12	8	5.0	15
12	6	6.0	15

d_1	e	d_2	Z
12	8	6.0	15
16	6	8.0	15
16	8	8.0	15
16	10	8.0	15
16	12	8.0	15
18	6	6.0	15
18	6	8.0	15
18	8	8.0	15
18	10	8.0	15
18	12	8.0	15
24	5	8.0	15
24	6	8.0	15
24	8	8.0	15
24	10	8.0	15
24	12	8.0	15
24	15	8.0	15
32	15	13.0	15

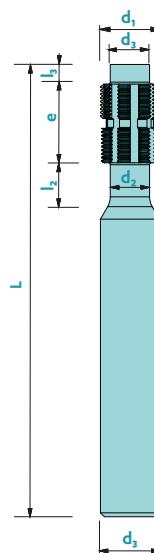
Duplex hob cutter on a shank

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances D : H5

Standard modules: 0.015 - 0.800. Other modules upon request

d_1	e	d_2	l_2	D	L	Z	d_3	l_3
3.0	5	2.0	2	6	45	8	2.0	1
3.5	5	2.5	2	6	45	8	2.5	1
4.0	5	3.0	3	6	45	8	3.0	1
5.0	6	3.5	3	6	45	10	3.5	1
6.0	6	4.0	3	6	45	12	4.0	1
8.0	6	-	-	6	45	12	5.0	1
10.0	8	-	-	6	45	15	6.0	1
12.0	8	-	-	6	45	15	8.0	1
16.0	8	-	-	10	51	15	10.0	2
20.0	8	-	-	10	51	15	12.0	2



Available
uncoated or coated



Z
8-15

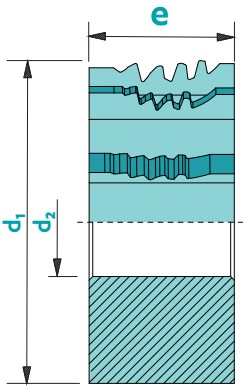
λ
0°

γ
0°

CARB



Hobs for asymmetrical gears



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances d_2 : H3 e : +0/-0.01

Available
uncoated or coated



λ
0°

γ
0°

CARB

Z: by profile

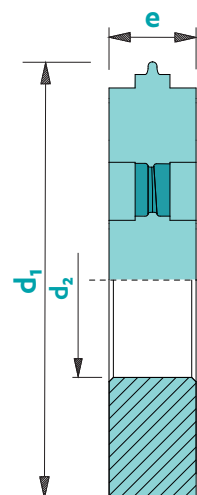
Standard modules: by profile

d_1	e	d_2
6	4	3.5
6	5	3.5
6	6	3.5
8	4	3.5
8	5	3.5
8	6	3.5
10	4	3.5
10	5	3.5
10	6	3.5
10	5	4.5
10	6	4.5
12	6	4.5
12	8	4.5
12	6	5.0
12	8	5.0
12	6	6.0
12	8	6.0
16	6	8.0
16	8	8.0
16	10	8.0
18	6	6.0
18	6	8.0
18	8	8.0
24	6	8.0
24	8	8.0

Hobs for frontal gear cutting

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances d_2 : H3 e : +0/-0.01



Standard modules: 0.030 - 0.500. Other modules upon request

d_1	e	d_2	Z
6	2	3.5	2-5
8	2	3.5	2-5
10	2	3.5	2-5
10	2	4.5	2-5
12	2	4.5	2-5
12	2	5.0	2-5
12	2	6.0	2-5
16	2	8.0	2-5
18	2	6.0	2-5
18	2	8.0	2-5
24	2	8.0	2-5

Available
uncoated or coated



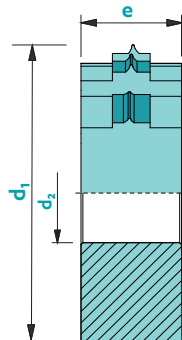
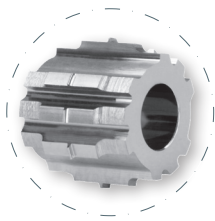
Z2-5

λ
0°

γ
0°

CARB

Hobs for conical gears



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances d_2 : H3 e : +0/-0.01

Standard modules: 0.030 - 0.500. Other modules upon request

Available uncoated or coated	
λ 0°	γ 0°
CARB	

Z: by profile

d_1	e	d_2
6	4	3.5
6	5	3.5
6	6	3.5
8	4	3.5
8	5	3.5
8	6	3.5
10	4	3.5
10	5	3.5
10	6	3.5
10	5	4.5
10	6	4.5
12	6	4.5
12	8	4.5
12	6	5.0
12	8	5.0
12	6	6.0
12	8	6.0
16	6	8.0
16	8	8.0
16	10	8.0
18	6	6.0
18	6	8.0
18	8	8.0
24	6	8.0
24	8	8.0

Hob cutter for involute gears ISO53 / DIN867 - DIN quality AAAA

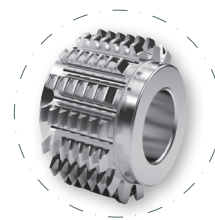
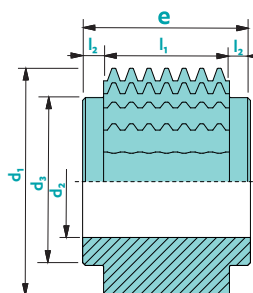
8100

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

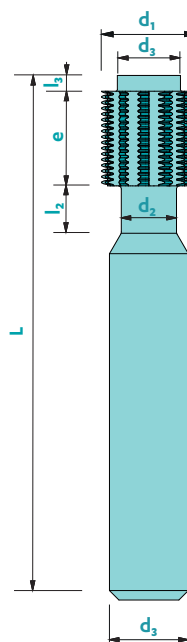
Tolerances d_2 : H3 e : +0/-0.01

Standard modules: 0.050 to 1.000 every 0.05. Other modules: upon request

Art. n°	d_1	e	l_1	d_2	d_3	l_2	Z
8100d8e8m###	8	8.0	6	3.5	5.0	1.0	15
8100d8e10m###	8	10.0	8	3.5	5.0	1.0	15
8100d8e12m###	8	12.0	10	3.5	5.0	1.0	15
8100d10e8m###	10	8.0	6	3.5	6.0	1.0	15
8100d10e10m###	10	10.0	8	3.5	6.0	1.0	15
8100d10e12m###	10	12.0	10	3.5	6.0	1.0	15
8100d12e8m###	12	8.0	6	4.5	8.0	1.0	15
8100d12e10m###	12	10.0	8	4.5	8.0	1.0	15
8100d12e12m###	12	12.0	10	4.5	8.0	1.0	15
8100d16e8m###	16	8.0	6	8.0	10.0	1.0	15
8100d16e10m###	16	10.0	8	8.0	10.0	1.0	15
8100d16e12m###	16	12.0	10	8.0	10.0	1.0	15
8100d18e8m###	18	8.0	6	8.0	12.0	1.0	15
8100d18e10m###	18	10.0	8	8.0	12.0	1.0	15
8100d18e12m###	18	12.0	10	8.0	12.0	1.0	15
8100d24e12m###	24	12.0	9	8.0	16.0	1.5	15
8100d24e15m###	24	15.0	12	8.0	16.0	1.5	15
8100d24e20m###	24	20.0	17	8.0	16.0	1.5	15
8100d32e12m###	32	12.0	9	13.0	24.0	1.5	15
8100d32e15m###	32	15.0	12	13.0	24.0	1.5	15
8100d32e20m###	32	20.0	17	13.0	24.0	1.5	15
8100d32e25m###	32	25.0	22	13.0	24.0	1.5	15
8100d32e30m###	32	30.0	27	13.0	24.0	1.5	15



Option : on a shank



Available
uncoated or coated

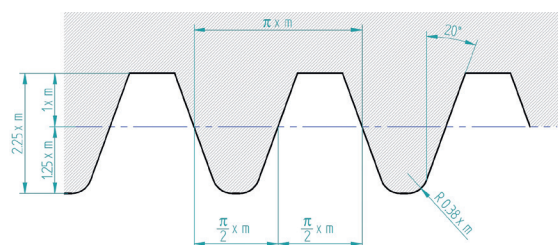


Z15

λ
0°

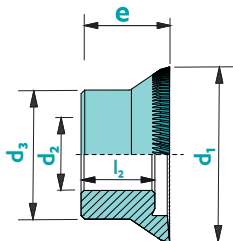
γ
0°

CARB



8700

Skiving cutter for internal gear teeth



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	170	■	-	SOLO (DA)
Lead-free brass	150	170	■	□	SOLO (DA)
CuBe (copper alloys)	100	120	■	□	SOLO (DA)
Nickel silver (Maillechort)	120	140	■	□	SOLO (DA)
Bronze	120	140	■	□	SOLO (DA)
Aluminium	200	220	■	-	SOLO (DA)
Titanium	80	90	■	-	-

Tolerances d_2 : H3 e : +0/-0.01

Standard modules: 0.050 - 1.000. Other modules upon request

d_1	e	d_2	d_3	l_2
20-25	12	10	18	10
25-32	12	10	18	10

Other dimensions available upon request.

Z: according to machined part

CARB

On-line form

You may send a request for a quotation for hob cutters via our on-line form. Our technical office shall analyse your requirements and can recommend the suitable hob cutter for your application.

Demande d'offre - fraise de taillage

Remplissez le formulaire de faisabilité des fraises de taillage de roues dentées avec vos coordonnées et transférez vos fichiers de profil. Notre bureau technique analysera vos besoins et sera en mesure de vous proposer le type de fraise à utiliser et les dimensions préconisées dans les heures qui suivent votre demande. Plus votre demande sera complète, plus la réponse sera rapide.

Votre entreprise

Entreprise*

Adresse*

NPA* Ville*

Pays*

Pièce à tailler

Norme Module

Matière à usiner

Z Od

Od Od

Fichier annexe 1 [Parcourir...](#)

Fichier annexe 2 [Parcourir...](#)

Fichier annexe 3 [Parcourir...](#)

Personne de contact

Nom & Prénom*

Email*

Téléphone*

Infos : Fraises

Quantité Epaisseur

Ø extérieur Ø Ailetage

Revêtement Z Fraise

☒ Topping

Remarques

Protection spam - Quel est le résultat ? *

81 - 177

[Envoyer](#)

Online Spreadsheet for gear hobbing

Calculate your cutting and machining parameters using our interactive tool:

Fiche de calcul pour taillage par génération de roue cylindrique droite

Réf. pièce à tailler RAZ PDF

Pièce à tailler

Norme

Matière

Module [m] 0.08

Z Pièce 9 dents

Longueur à tailler [b] 1.5 mm

Ø de tête [da] 0.842 mm

Ø de pied [df] réel 2 mm

Min = 0, Max = Ø primitif [d] 0.85 mm

Ø d'ébauche [de] 0.85 mm

Sorties

Pas [p] 0.251327 mm

Cote sur 3 dents 0.8166 mm

Ø primitif [d] 0.7200 mm

Hauteur profil [h] -0.5790 mm

Hauteur profil ébauche [he] -0.5750 mm

Fraise

Ø Fraise [f1] 12 mm

Epaisseur 4 mm

Z Fraise 7 dents

Nbr de filets [f] 1

Hélice 0.3819662 °

Pas en travail 2 pas

Décalage du profil par dent 0.0359039 mm

Paramètres machine

Vc 105 m/min

Fz 0.0048 mm/z

Trajectoire d'usage Traversant avec entrée

n fraise 2781 t/min

n pièce 309 t/min

Avance [vf] 10.4 mm/min

Avance par tour de fraise 0.0037 mm/tour fraise

Avance par tour de pièce 0.0432 mm/tour pièce

Valeur de shifting 0.502654 mm

Nbr de shifting 8.0

Dégagement [c] nan mm

Temps de taillage 4.158 secondes

Schémas





Sold and
Serviced in NA

Star Cutter Company
23461 Industrial Park Drive
Farmington Hills, MI 48335

Tel (248) 474-8200
Fax (248) 474-9518
www.Star-SU.com