LOUIS BELET
Swiss Cutting tools

Z²

ORIGIN

DUPLEX

REVOLUTION

Gear cutting solutions

E.F₂

TRINITY

8100

8700

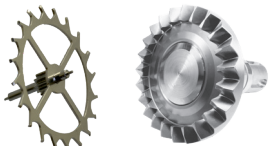
SWISS MADE

Gear cutting solutions

Type	Name of tool	Standard modules*	Tool	Tool Machined part	Page
Tooth by tooth gear cutter	Z²	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	E_2F	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

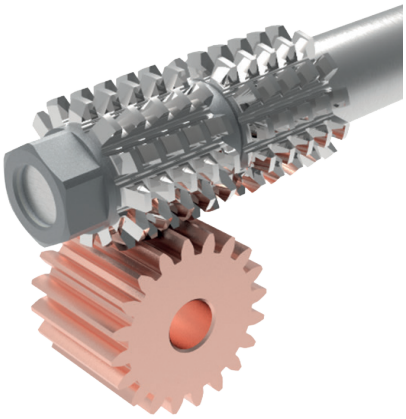
*Depends on the gearing norm
Other modules upon request

New

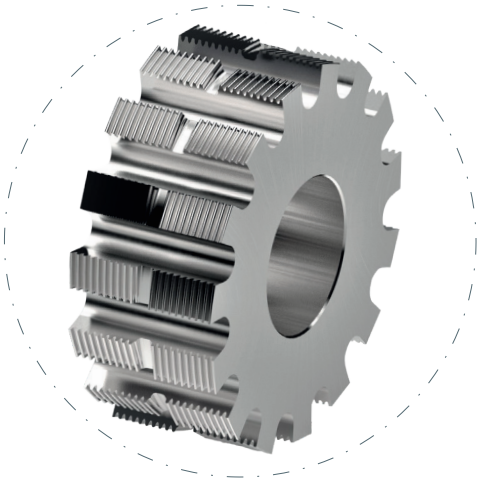
DUPLEX ORIGIN Hobs for epicyclic & involute teeth

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.



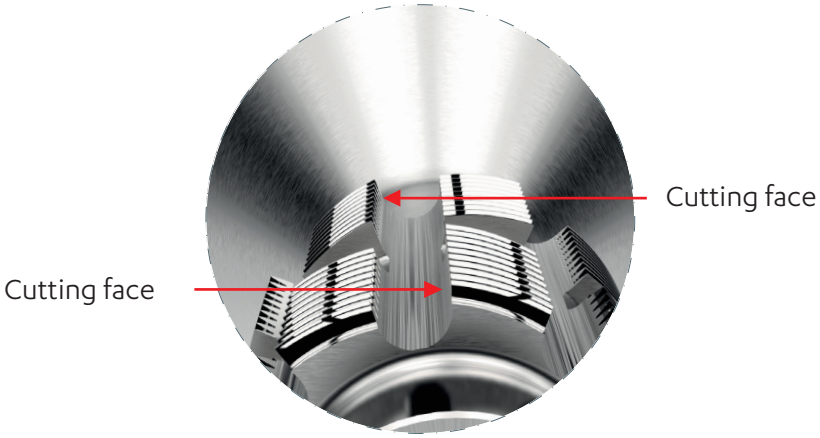
ORIGIN DUPLEX on a shank



Circular ORIGIN DUPLEX

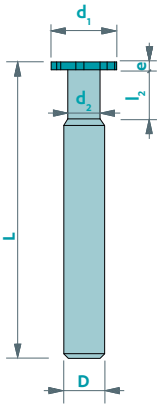
Made of one-piece solid carbide, these cutters have two cutting areas, one on the right and one on the left. The two profiles are spaced a multiple of the pitch.

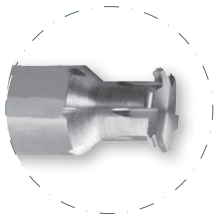
This simplifies the setting. In addition, roundness and axial warpage are greatly reduced.



Tooth by tooth gear cutter

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	■	-	-



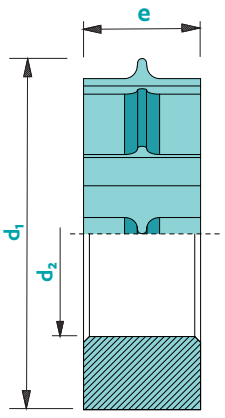


Tolerances D : h5

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

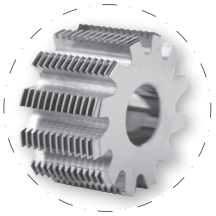


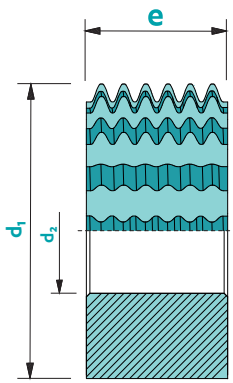
Available uncoated or coated

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_2: 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°

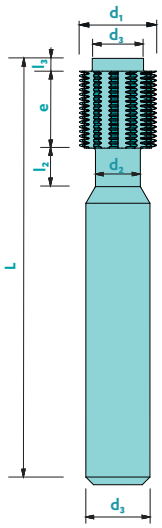
CARB

d_1	e	d_2	Z
6	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

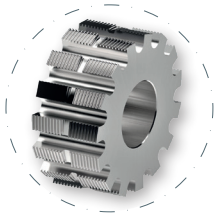
Z 8-15

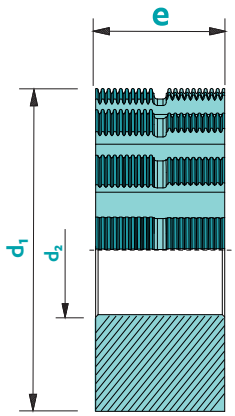
λ 0°

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_2: 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

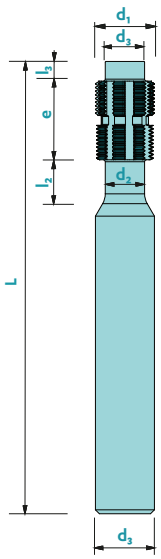
d_1	e	d_2	Z
12	8	6.0	15
16	6	8.0	15
16	8	8.0	15
16	10	8.0	15
16	12	8.0	15
18	6	6.0	15
18	6	8.0	15
18	8	8.0	15
18	10	8.0	15
18	12	8.0	15
24	5	8.0	15
24	6	8.0	15
24	8	8.0	15
24	10	8.0	15
24	12	8.0	15
24	15	8.0	15
32	15	13.0	15

Duplex hob cutter on a shank

ORIGIN

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

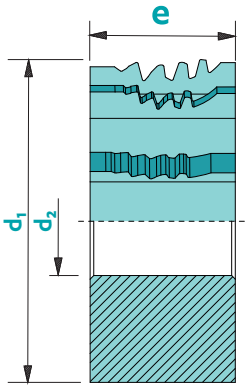
Z 8-15

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

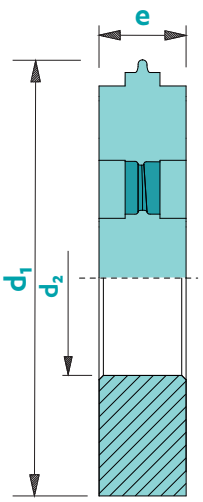
d_1	e	d_2
6	4	3.5
6	5	3.5
6	6	3.5
8	4	3.5
8	5	3.5
8	6	3.5
10	4	3.5
10	5	3.5
10	6	3.5
10	5	4.5
10	6	4.5
12	6	4.5
12	8	4.5
12	6	5.0
12	8	5.0
12	6	6.0
12	8	6.0
16	6	8.0
16	8	8.0
16	10	8.0
18	6	6.0
18	6	8.0
18	8	8.0
24	6	8.0
24	8	8.0

Hobs for frontal gear cutting

E2F

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

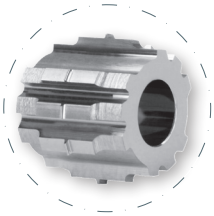
Z2-5

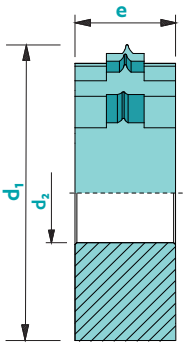
λ 0°

γ 0°

CARB

Hobs for conical gears



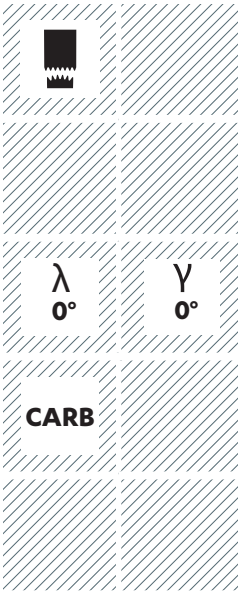


Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel 20AP	70	90	■	□	TRIO (PO)
Steel Law 100X	70	90	■	□	TRIO (PO)
Carbon steel (Finemac)	50	60	■	■	TRIO (PO)
4C27A	60	70	■	■	TRIO (PO)
CK45	80	90	■	■	TRIO (PO)
316L	60	70	■	■	TRIO (PO)
Other stainless steel	60	70	■	■	TRIO (PO)
Leaded brass	150	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

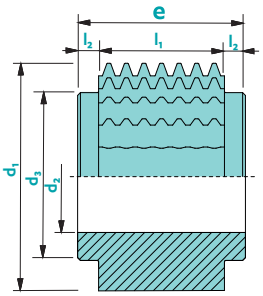


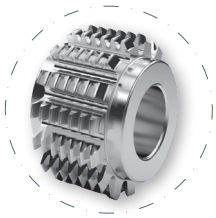
Z: by profile

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

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	■	-	-



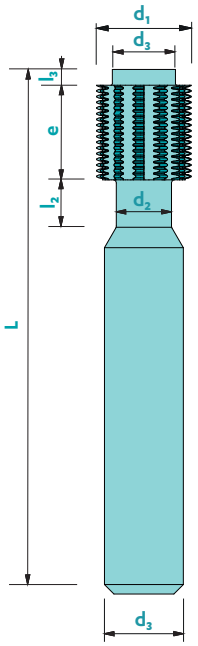


Tolerances d_2: H3 e: +0/-0.01

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



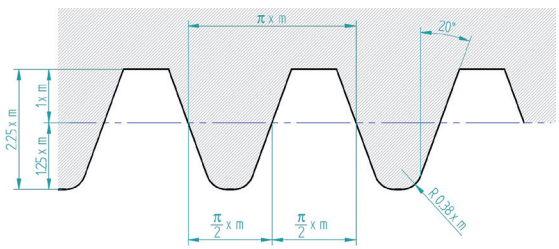
Available uncoated or coated

Z15

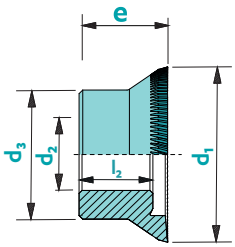
λ 0°

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

Available uncoated or coated

CARB

Standard modules: 0.050 - 1.000. Other modules upon request

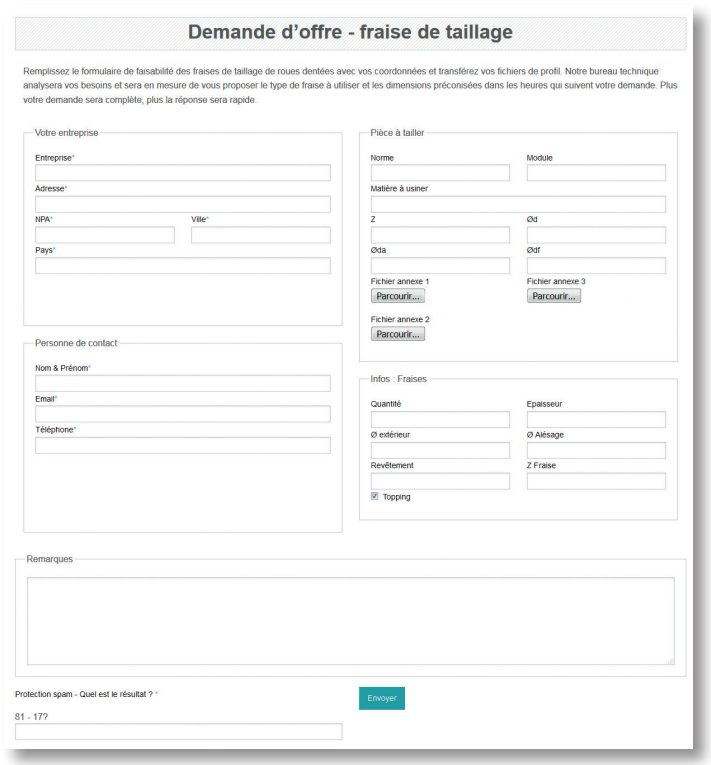
d_1	e	d_2	d_3	l_2
20-25	**12**	**10**	18	10
25-32	**12**	**10**	18	10

Other dimensions available upon request.

Z: according to machined part

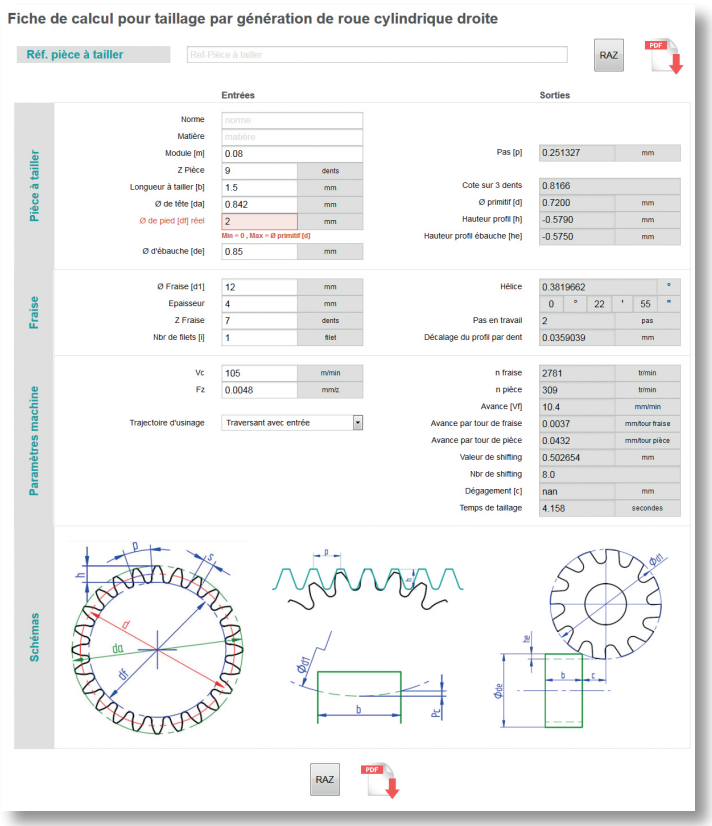
On-line form

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.



Online Spreadsheet for gear hobbing

Calculate your cutting and machining parameters using our interactive tool:



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