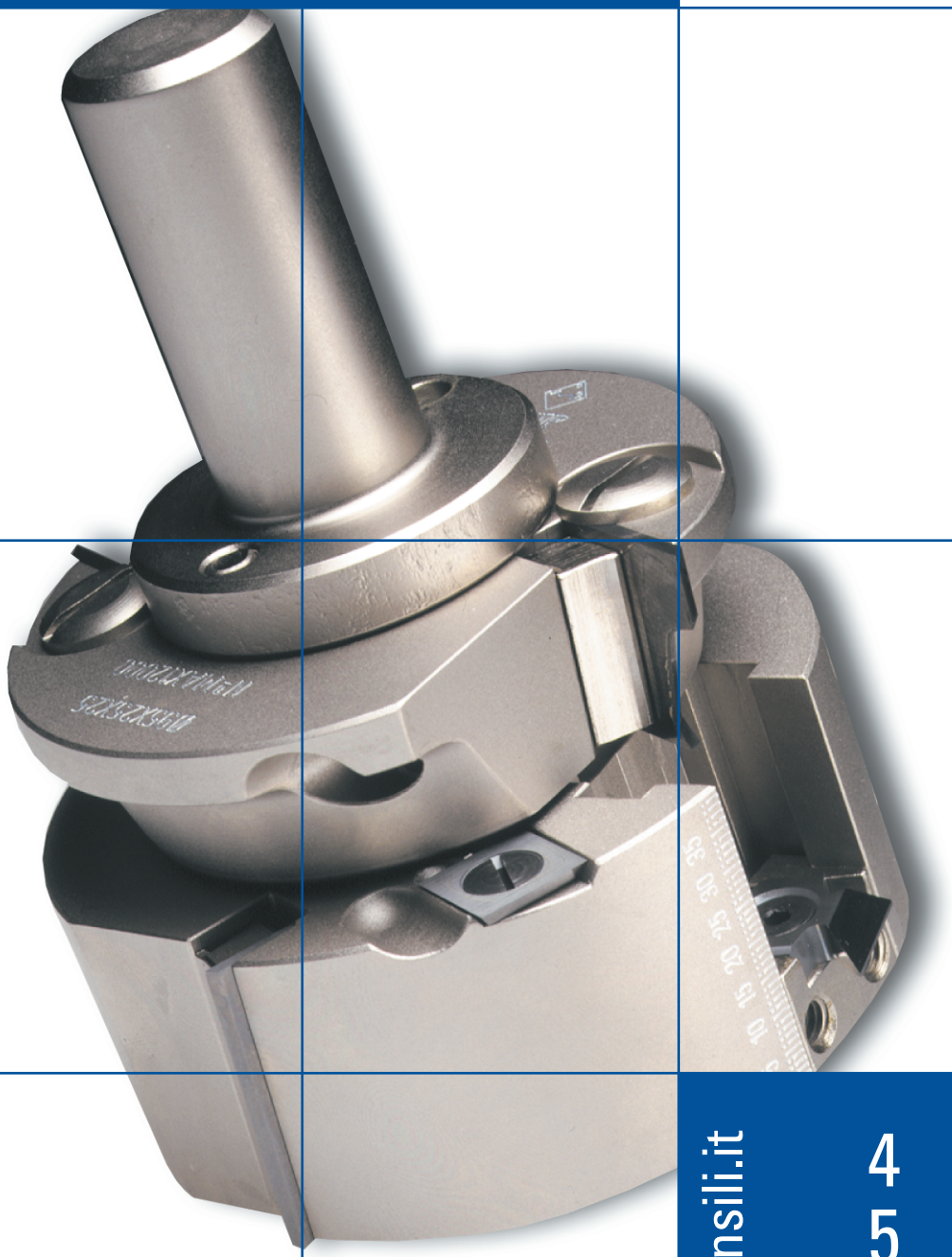
Precision tools for CNC machines

BUP
UTENSILI

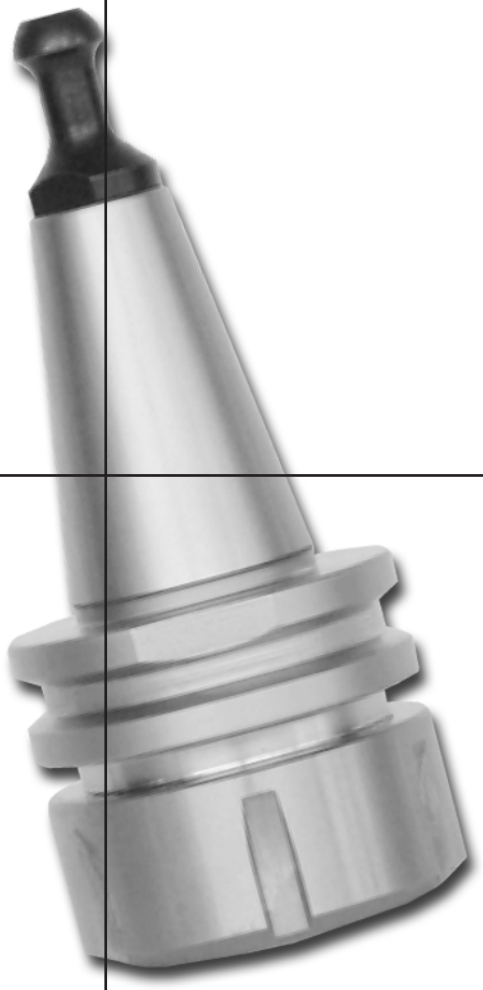


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A/07

4





Mandrini per pantografi CNC

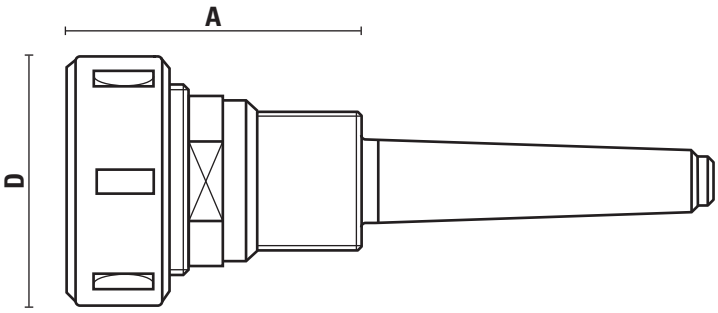
Chuck for CNC routers

4111

MANDRINO DI PRECISIONE ATTACCO CONO MORSE
HIGH PRECISION COLLET CHUCK - MK2/ MK3 SHANK

BUP UTENSILI





CM2/M30x1,5 (**Cono/***Taper*)

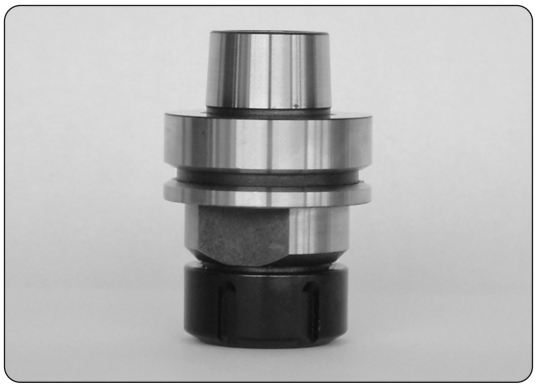
Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4111.010.001	50	60	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	E17
4111.010.002	50	60	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	C18

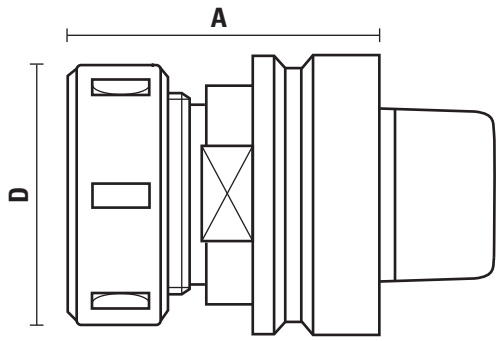
CM3/M30x1,5 (**Cono/***Taper*)

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4111.020.001	50	62	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	E19
4111.020.002	50	62	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	M19

4112

MANDRINO DI PRECISIONE ATTACCO HSK
HIGH PRECISION COLLET CHUCK - HSK SHANK





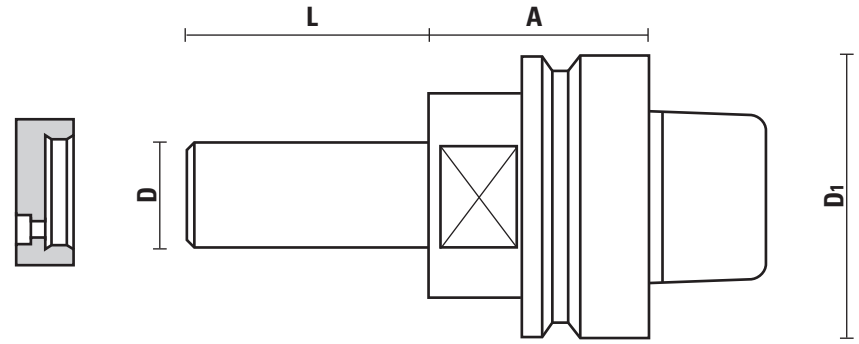
HSK 63 F (**Cono/***Taper*)

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4112.010.001	50	76	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	E19
4112.010.002	50	76	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	D20
4112.020.001	63	76	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	D20
4112.020.002	63	76	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	A21

HSK 63 E (**Cono/***Taper*)

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4112.030.001	63	76	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	A21
4112.030.002	63	76	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	H21





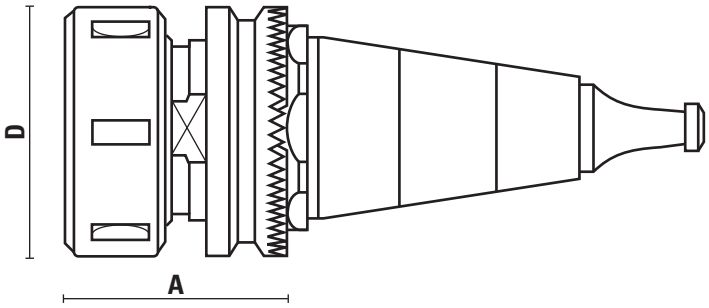
HSK 63 (**Con albero/***With spindle*)

Codice *Code*	**Tipo** *Type*	**D** *D*	**A** *A*	**L** *L*	**Codice Prezzo** *Price Code*
4112.100.001	HSK 63 F	30	33	70	D20
4112.100.002	HSK 63 F	30	33	100	D20
4112.110.001	HSK 63 F	30	42	70	D20
4112.110.002	HSK 63 F	30	42	100	D20
4112.120.001	HSK 63 E	30	45	70	H21
4112.120.002	HSK 63 E	30	45	100	H21

4113

MANDRINO DI PRECISIONE ATTACCO ISO 30
HIGH PRECISION COLLET CHUCK - ISO 30 SHANK



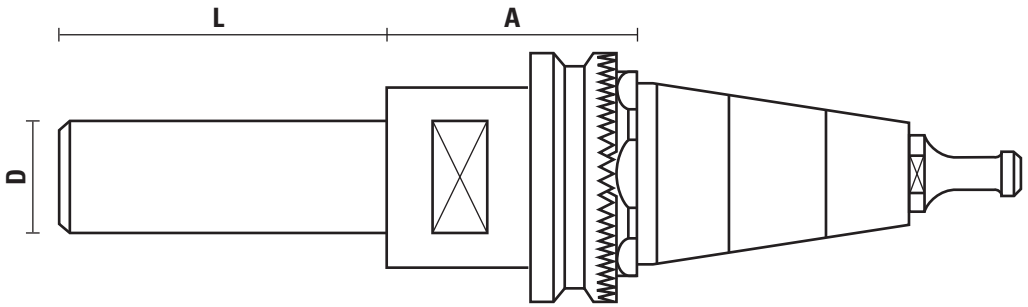


ISO 30 (**Cono/***Taper*)

Macchina/*Machine:* **Morbidelli, SCM**

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4113.010.001	50	55	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	B19
4113.010.002	50	55	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	B20
4113.020.001	63	55	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	H21
4113.020.002	63	55	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	F22
4113.030.001	60	72	∅3÷25 (art. 4116)	Din 6388 (art. 4118)	Dx/Rh	H21
4113.030.002	60	72	∅3÷25 (art. 4116)	Din 6388 (art. 4118)	Sx/Lh	F22





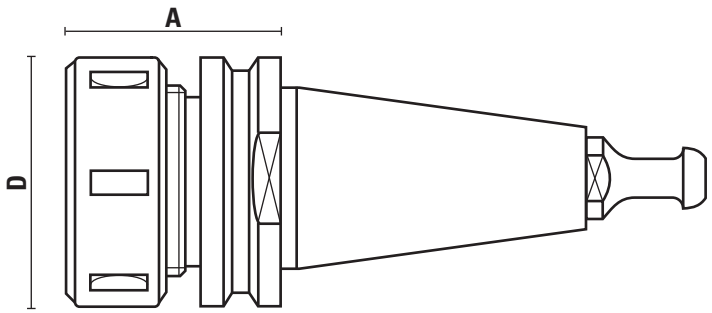
ISO 30 (**Con albero/***With spindle*)

Codice *Code*	**D** *D*	**A** *A*	**L** *L*	**Codice Prezzo** *Price Code*
4113.100.001	30	35	70	L20
4113.100.002	30	35	100	L20

4114

MANDRINO DI PRECISIONE ATTACCO ISO 30 - ISO 40
HIGH PRECISION COLLET CHUCK - ISO 30 /ISO 40 SHANK





Tipo/*Type:* **ISO 30** — **Macchina/***Machine:* **Biesse, Masterwood, Bulleri**

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4114.010.001	50	50	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	B16
4114.010.002	50	50	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	M16
4114.020.001	63	50	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	E17
4114.020.002	63	50	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	D18

Tipo/*Type:* **ISO 30** — **Macchina/***Machine:* **Alberti, Vitap, Masterwood** (G. Colombo)

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4114.030.001	50	60	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	B18
4114.030.002	50	60	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	M18
4114.040.001	63	60	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	A20
4114.040.002	63	60	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	F20

Tipo/*Type:* **ISO 30** — **Macchina/***Machine:* **Busellato, Weeke, IMA, Bulleri, Maka, Cosmec, Reinchenbacher**

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4114.050.001	50	60	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	B18
4114.050.002	50	60	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	M18
4114.060.001	63	60	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	A20
4114.060.002	63	60	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	F20

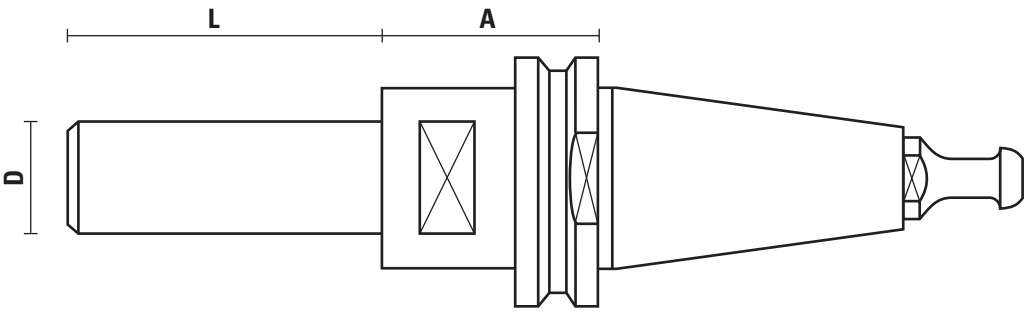
Tipo/*Type:* **ISO 40** — **Macchina/***Machine:* **Weeke, IMA, Maka, Reinchenbacher, Stegherr**

Codice *Code*	**D** *D*	**A** *A*	**Pinza** *Collet*	**Ghiera** *Lock nut*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4114.070.001	50	50	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Dx/Rh	A21
4114.070.002	50	50	∅3÷20 (art. 4116)	ER 32 (art. 4118)	Sx/Lh	H21
4114.080.001	63	60	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Dx/Rh	H21
4114.080.002	63	60	∅3÷25 (art. 4116)	ER 40 (art. 4118)	Sx/Lh	E22

4115

MANDRINO PORTAFRESE DI PRECISIONE ISO 30-ISO 40
HIGH PRECISION SPINDLE CHUCK - ISO 30/ISO 40 SHANK





Macchina/*Machine:* **Biesse, Masterwood, Bulleri**

Codice *Code*	**Tipo** *Type*	**D** *D*	**A** *A*	**L** *L*	**Codice Prezzo** *Price Code*
4115.010.001	ISO 30	30	35	70	F20
4115.010.002	ISO 30	30	35	100	F20

Macchina/*Machine:* **Alberti, Vitap, Masterwood** (G. Colombo)

Codice *Code*	**Tipo** *Type*	**D** *D*	**A** *A*	**L** *L*	**Codice Prezzo** *Price Code*
4115.030.001	ISO 30	30	35	70	E22
4115.030.002	ISO 30	30	35	100	E22

Macchina/*Machine:* **Busellato, Weeke, IMA, Bulleri, Maka, Cosmec, Reinchenbacher**

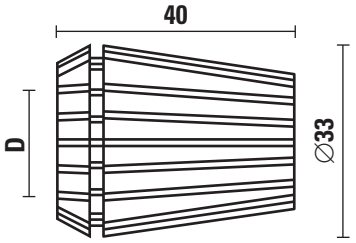
Codice *Code*	**Tipo** *Type*	**D** *D*	**A** *A*	**L** *L*	**Codice Prezzo** *Price Code*
4115.050.001	ISO 30	30	35	70	E22
4115.050.002	ISO 30	30	35	100	E22

Tipo/*Type:* **ISO 40**

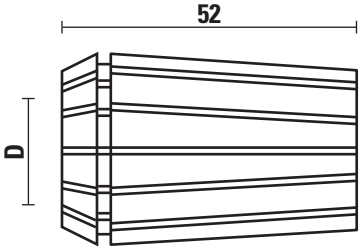
Macchina/*Machine:* **Weeke, IMA, Maka, Reinchenbacher, Stegherr**

Codice *Code*	**Tipo** *Type*	**D** *D*	**A** *A*	**L** *L*	**Codice Prezzo** *Price Code*
4115.070.001	ISO 40	30	40	70	B23
4115.070.002	ISO 40	30	40	100	B23

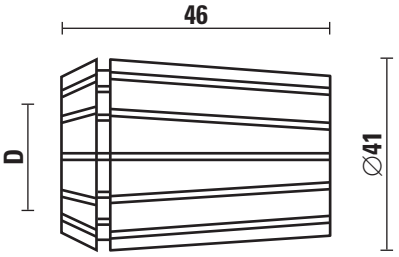
PINZE ELASTICHE DI PRECISIONE
HIGH PRECISION COLLETS



ER 32



DIN 6388

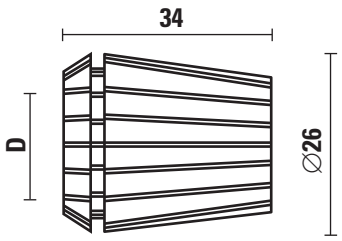


ER 40

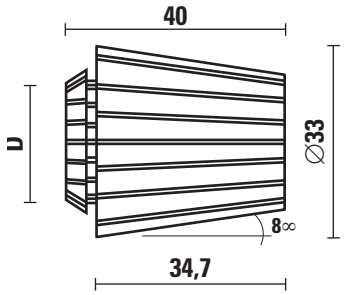
Codice *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*	**Codice** *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*
4116.030.000	ER 32	3	G04	4116.120.000	ER 32	12	G04
4116.040.000	ER 32	4	G04	4116.130.000	ER 32	13 (1/2″)	G04
4116.050.000	ER 32	5	G04	4116.140.000	ER 32	14	G04
4116.060.000	ER 32	6	G04	4116.160.000	ER 32	16 (5/8″)	G04
4116.070.000	ER 32	7 (1/4″)	G04	4116.180.000	ER 32	18	G04
4116.080.000	ER 32	8 (5/16″)	G04	4116.190.000	ER 32	19	G04
4116.100.000	ER 32	10 (3/8″)	G04	4116.200.000	ER 32	20 (3/4″)	G04

Codice *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*	**Codice** *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*
4116.060.001	DIN 6388	6	M08	4116.140.001	DIN 6388	14	M08
4116.080.001	DIN 6388	8 (5/16″)	M08	4116.160.001	DIN 6388	16 (5/8″)	M08
4116.100.001	DIN 6388	10 (3/8″)	M08	4116.180.001	DIN 6388	18	M08
4116.120.001	DIN 6388	12	M08	4116.200.001	DIN 6388	20 (3/4″)	M08
4116.130.001	DIN 6388	13 (1/2″)	M08	4116.250.001	DIN 6388	25	M08

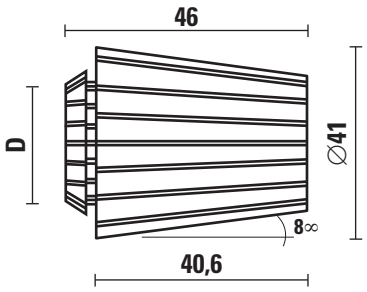
Codice *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*	**Codice** *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*
4116.030.002	ER 40	3	G05	4116.130.002	ER 40	13 (1/2″)	G05
4116.040.002	ER 40	4	G05	4116.140.002	ER 40	14	G05
4116.050.002	ER 40	5	G05	4116.160.002	ER 40	16 (5/8″)	G05
4116.060.002	ER 40	6	G05	4116.180.002	ER 40	18	G05
4116.070.002	ER 40	7 (1/4″)	G05	4116.190.002	ER 40	19	G05
4116.080.002	ER 40	8 (5/16″)	G05	4116.200.002	ER 40	20 (3/4″)	G05
4116.100.002	ER 40	10 (3/8″)	G05	4116.250.002	ER 40	25	G05
4116.120.002	ER 40	12	G05				



ER 25



ETS 32



ETS 40

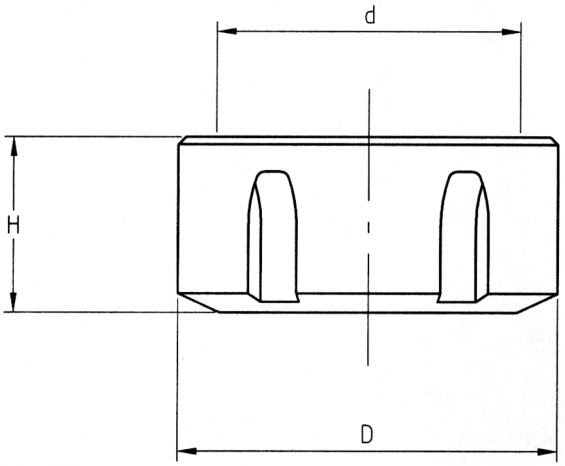
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4117.030.000	ER 25	3	G04	4117.100.000	ER 25	10 (3/8")	G04
4117.040.000	ER 25	4	G04	4117.120.000	ER 25	12	G04
4117.050.000	ER 25	5	G04	4117.130.000	ER 25	13 (1/2")	G04
4117.060.000	ER 25	6	G04	4117.140.000	ER 25	14	G04
4117.070.000	ER 25	7 (1/4")	G04	4117.160.000	ER 25	16 (5/8")	G04
4117.080.000	ER 25	8 (5/16")	G04				

Codice *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*	**Codice** *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*
4117.060.001	ETS 32	6	L11	4117.140.001	ETS 32	14	L11
4117.080.001	ETS 32	8	L11	4117.160.001	ETS 32	16	L11
4117.100.001	ETS 32	10	L11	4117.180.001	ETS 32	18	L11
4117.120.001	ETS 32	12	L11	4117.200.001	ETS 32	20	L11

Codice *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*	**Codice** *Code*	**Tipo** *Type*	**D** *D*	**Codice Prezzo** *Price Code*
4117.040.002	ETS 40	4	E14	4117.140.002	ETS 40	14	E14
4117.060.002	ETS 40	6	E14	4117.160.002	ETS 40	16	E14
4117.080.002	ETS 40	8	E14	4117.180.002	ETS 40	18	E14
4117.100.002	ETS 40	10	E14	4117.200.002	ETS 40	20	E14
4117.120.002	ETS 40	12	E14	4117.250.002	ETS 40	25	E14

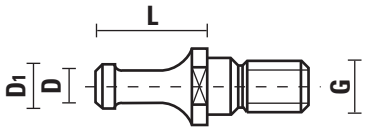
4118

GHIERA DI SERRAGGIO PINZA
COLLET`S LOCK NUT



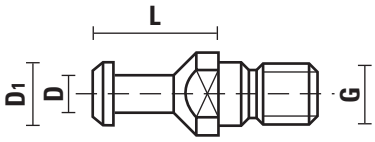
Codice *Code*	**Tipo** *Type*	**D** *D*	**H** *H*	**d** *d*	**Rotazione** *Rotation*	**Codice Prezzo** *Price Code*
4118.010.001	ER 32	50	23	M40x1,5	Dx/Rh	C05
4118.010.002	ER 32	50	23	M40x1,5	Sx/Lh	A06
4118.020.001	ER 40	63	25	M50x1,5	Dx/Rh	B07
4118.020.002	ER 40	63	25	M50x1,5	Sx/Lh	F08
4118.030.001	DIN 6388	60	30	M48x2	Dx/Rh	B09
4118.030.002	DIN 6388	60	30	M48x2	Sx/Lh	A11
4118.040.001	ETS 32	50	23	M40x1,5	Dx/Rh	C05
4118.040.002	ETS 32	50	23	M40x1,5	Sx/Lh	A06
4118.050.001	ETS 40	63	25	M50x1,5	Dx/Rh	B07
4118.050.002	ETS 40	63	25	M50x1,5	Sx/Lh	F08

TIRANTI PER MANDRINI DI PRECISIONE
RETAINING BOLTS FOR ISO 30/ISO 40 CHUCKS



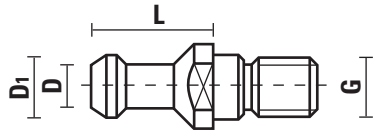
Macchina/*Machine:* **Morbidelli, SCM**

Codice *Code*	**Tipo** *Type*	**D1** *D1*	**D** *D*	**L** *L*	**G** *G*	**Codice Prezzo** *Price Code*
4119.010.000	ISO 30	8,5	6,5	22	M10	B04



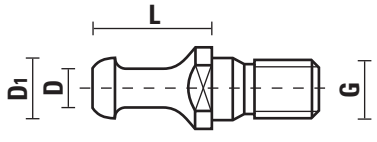
Macchina/*Machine:* **Busellato, Weeke, IMA, Bulleri, Maka, Cosmec**, **Reinchenbacher**

Codice *Code*	**Tipo** *Type*	**D1** *D1*	**D** *D*	**L** *L*	**G** *G*	**Codice Prezzo** *Price Code*
4119.020.000	ISO 30	13	9	24	M12	B04
4119.020.001	ISO 40	19	14	26	M16	F05



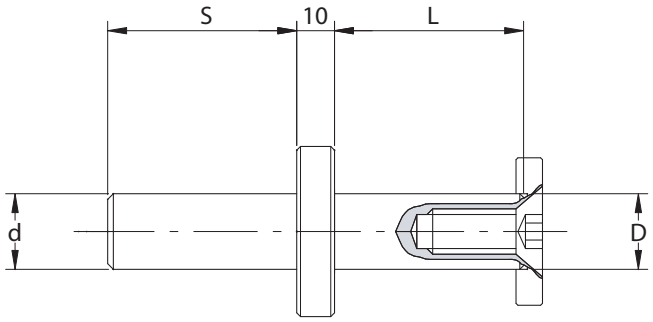
Macchina/*Machine:* **Alberti, Vitap, Masterwood** (G. Colombo)

Codice *Code*	**Tipo** *Type*	**D1** *D1*	**D** *D*	**L** *L*	**G** *G*	**Codice Prezzo** *Price Code*
4119.030.000	ISO 30	13	9	24	M12	B04

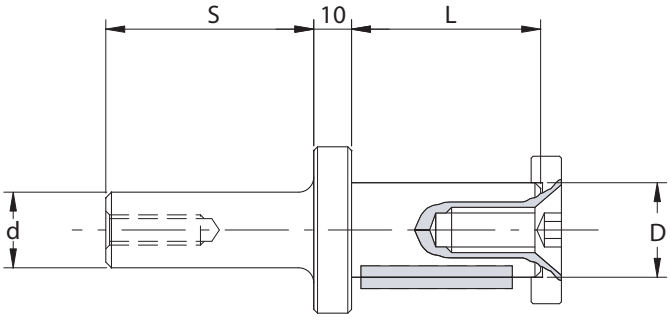


Macchina/*Machine:* **Biesse, Masterwood,** (H.S.D.)

Codice *Code*	**Tipo** *Type*	**D1** *D1*	**D** *D*	**L** *L*	**G** *G*	**Codice Prezzo** *Price Code*
4119.040.000	ISO 30	12	8	24	M12	B04



Codice *Code*	**D** *D*	**L** *L*	**d** *d*	**s** *s*	**Codice Prezzo** *Price Code*
4120.000.000	20	60 max	20	50	F15



Codice *Code*	**D** *D*	**L** *L*	**d** *d*	**s** *s*	**Codice Prezzo** *Price Code*
4120.020.000	25+kw	40/50/60	20	55	B17
4120.025.000	25+kw	40/50/60	25	55	B17

4010

FRESE SAGOMATE PER PANTOGRAFI
CNC PROFILE ROUTER CUTTERS

BUP UTENSILI



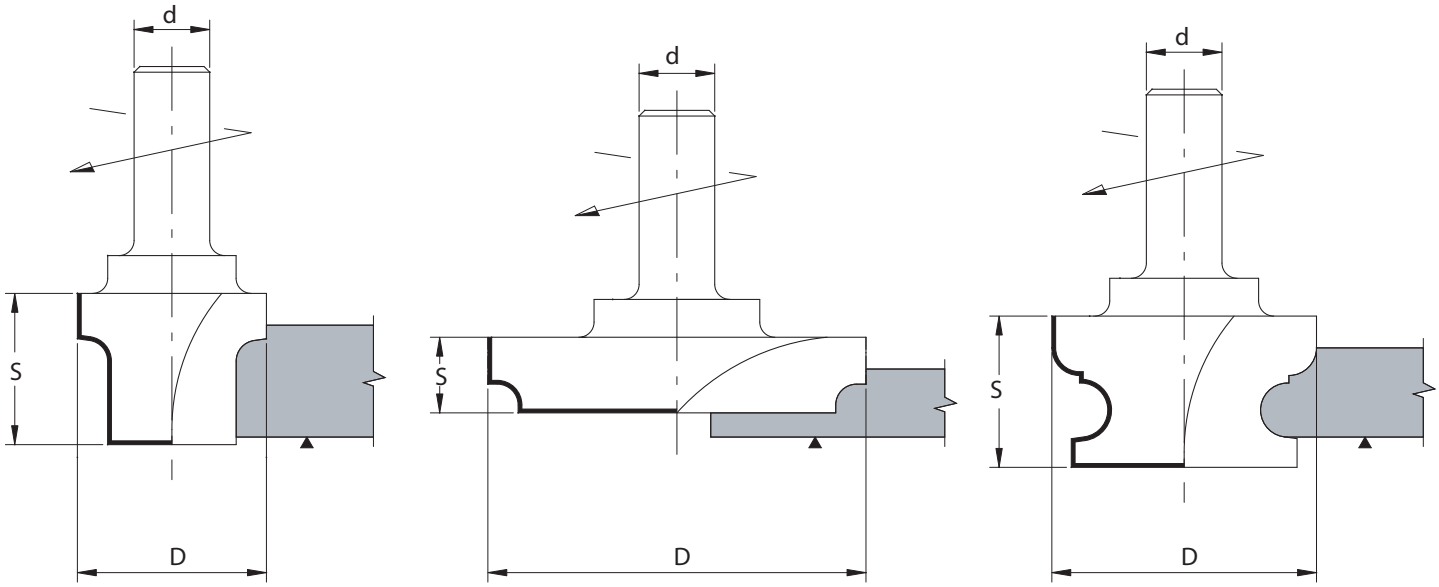
HW **MEC** **Z=2**

APPLICAZIONE/*APPLICATION*:
Realizzazione di profili sagomati su disegno.
Custom made profile cutters

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con taglienti in HW integrale micrograno riportato. Si costruiscono con angoli di taglio idonei alla lavorazione dei diversi tipi di legno. Vengono fornite con attacco cilindrico d. 20x50. Per attacchi conici aumento 15%.
Manufactured with brazed micrograin solid carbide. Produced with suitable cutting angles for different types of wood. Supplied with cylindrical shank d. 20x50. Increase of 15% for tapered shanks.

Codice *Code*	**D** *D*	**S** *S*	**Giri Max** *Rpm max*	**Cod. Prezzo** *Price Code*	**Codice** *Code*	**D** *D*	**S** *S*	**Giri Max** *Rpm max*	**Cod. Prezzo** *Price Code*
4010.040.020	40	20	20.000	H19	4010.060.060	60	60	18.000	E24
4010.040.030	40	30	20.000	L20	4010.080.020	80	20	18.000	L21
4010.040.040	40	40	18.000	L21	4010.080.030	80	30	18.000	M22
4010.040.050	40	50	18.000	M22	4010.080.040	80	40	18.000	L23
4010.050.020	50	20	20.000	D20	4010.080.050	80	50	18.000	G24
4010.050.030	50	30	20.000	D21	4010.080.060	80	60	16.000	B25
4010.050.040	50	40	18.000	E22	4010.080.080	80	80	14.000	L25
4010.050.050	50	50	18.000	D23	4010.100.020	100	20	16.000	H24
4010.050.060	50	60	18.000	A24	4010.100.025	100	25	14.000	D25
4010.060.020	60	20	20.000	L20	4010.100.030	100	30	14.000	M25
4010.060.030	60	30	18.000	L21	4010.120.020	120	20	14.000	H25
4010.060.040	60	40	18.000	M22	4010.120.025	120	25	14.000	D26
4010.060.050	60	50	18.000	L23	4010.120.030	120	30	12.000	M26



4030

FRESE SAGOMATE PER PANTOGRAFI
CNC PROFILE ROUTER CUTTERS



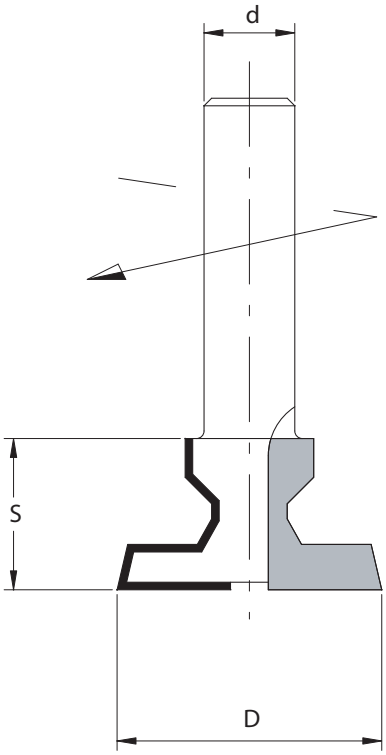
HW **MEC** **Z=2**

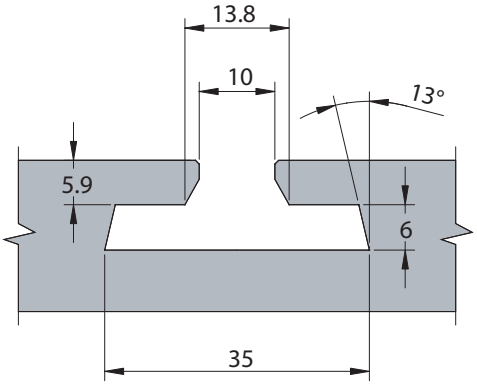
APPLICAZIONE/*APPLICATION*:
Realizzazione di canali a "T". Per inserimento profili in alluminio.
"T-SLOT" cuts for aluminium profiles.

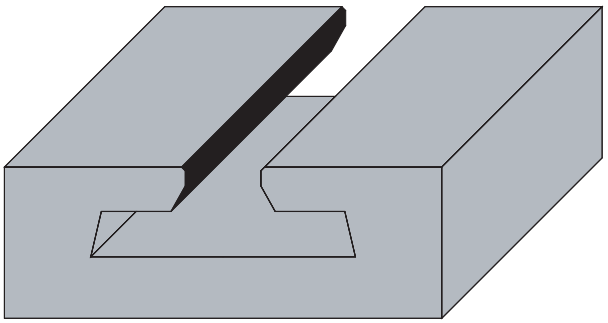
MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con taglienti in HW integrale micrograno riportato.
Manufactured with brazed micrograin solid carbide.

Codice *Code*	**D** *D*	**S** *S*	**Giri Max** *Rpm max*	**Cod. Prezzo** *Price Code*
4030.035.020	35	20	20.000	E17

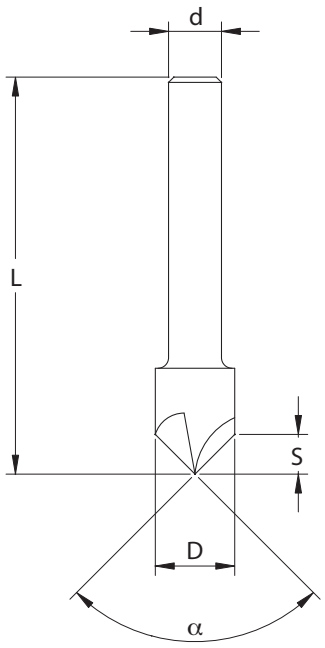






4031

FRESE PANTOGRAFO PER INCISIONI
ENGRAVING CNC PROFILE ROUTER CUTTERS



APPLICAZIONE/*APPLICATION*:
Incisioni di scritte o motivi decorativi su pannelli in legno o MDF.
Engraving and decoration of solid wood or MDF panels.

MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

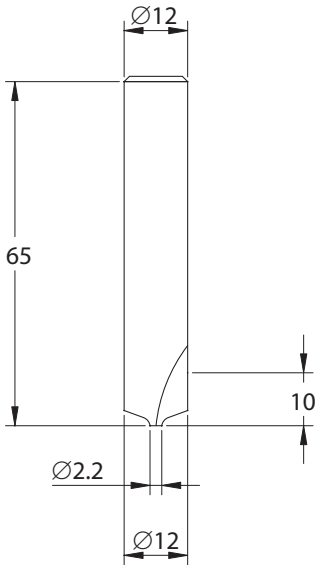
INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno con 3 taglienti diritti.
Vengono fornite con attacco cilindrico d.10. Giri 18.000-30.000 min^{-1}.
Manufactured with 3 micrograin solid carbide cutting edges.
Supplied with cylindrical shank d. 10. RPM 18.000-30.000 min^{-1}.

HW **MEC**

Codice *Code*	**D** *D*	**S** *S*	**L** *L*	α α	**Z** *Z*	**Cod. Prezzo** *Price Code*
4031.000.001	15	18	75	45°	3	C15
4031.000.002	15	13	75	60°	3	C15
4031.000.003	15	8	75	90°	3	C15

4032

FRESE PANTOGRAFO PER INCISIONI
PROFILE CUTTERS FOR SIMPLE PROFILES



APPLICAZIONE/*APPLICATION*:
Incisioni di scritte o motivi decorativi su pannelli in legno o MDF.
Engraving and decoration of solid wood or MDF panels.

MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

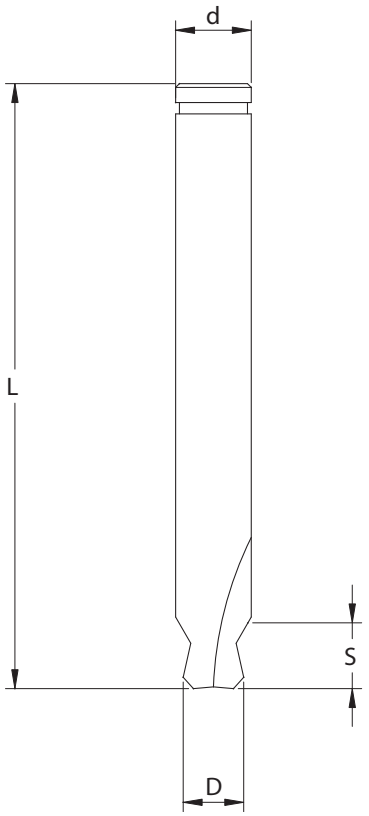
INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno con 3 taglienti diritti.
Vengono fornite con attacco cilindrico d.12. Giri 18.000-30.000 min^{-1}.
Manufactured with 3 micrograin solid carbide cutting edges.
Supplied with cylindrical shank d. 12. RPM 18.000-30.000 min^{-1}.

HW **MEC** **Z=2**

Codice *Code*	**D** *D*	**S** *S*	**L** *L*	**d** *d*	**Cod. Prezzo** *Price Code*
4032.000.001	12	10	65	12	E15

4033

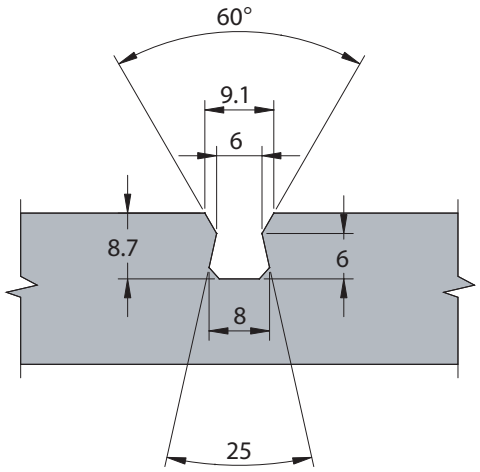
FRESE PER CANALI SU PIANO PANTOGRAFO
GROOVING CUTTERS FOR CNC ROUTER TABLES



APPLICAZIONE/*APPLICATION*:
Esecuzione di canali per piani pantografi.
Dove tail grooving cutter for router tables.

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno con 2 taglienti diritti.
Vengono fornite con attacco cilindrico d.10. Giri 18.000-30.000 min^{-1}.
Manufactured with 2 micrograin solid carbide cutting edges.
Supplied with cylindrical shank d. 10. RPM 18.000-30.000 min^{-1}.



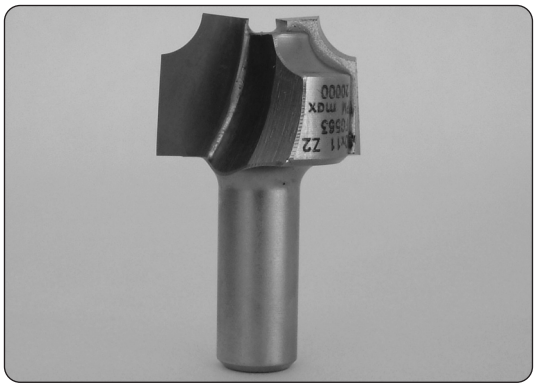
HW **MEC** **Z=2**

Codice *Code*	**D** *D*	**S** *S*	**L** *L*	**d** *d*	**Cod. Prezzo** *Price Code*
4033.000.001	8	8,7	80	10	E14

4035

FRESE SAGOMATE PER PANTOGRAFI
CNC PROFILE ROUTER CUTTERS

BUP UTENSILI



APPLICAZIONE/*APPLICATION*:
Realizzazione di profili sagomati su disegno.
Custom made profile cutters

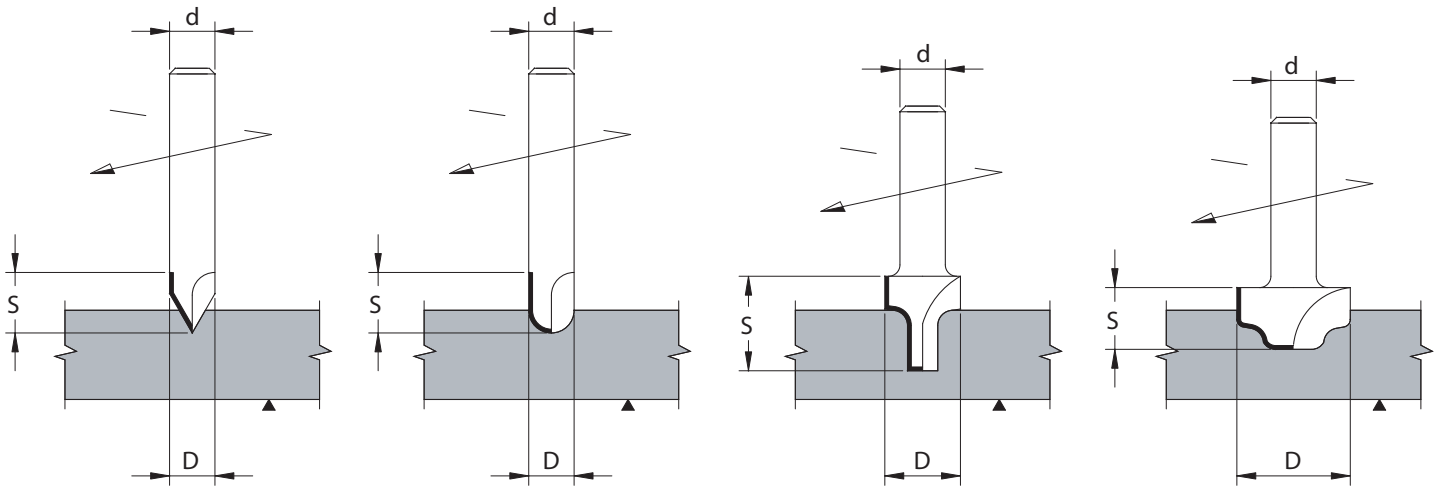
MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con taglienti in HW integrale micrograno riportato. Si costruiscono con angoli di taglio idonei alla lavorazione dei diversi tipi di legno. Vengono fornite con attacco cilindrico.
Manufactured with brazed micrograin solid carbide. Produced with suitable cutting angles for different types of wood. Supplied with cylindrical shank.

HW | **MEC** | **Z=2**

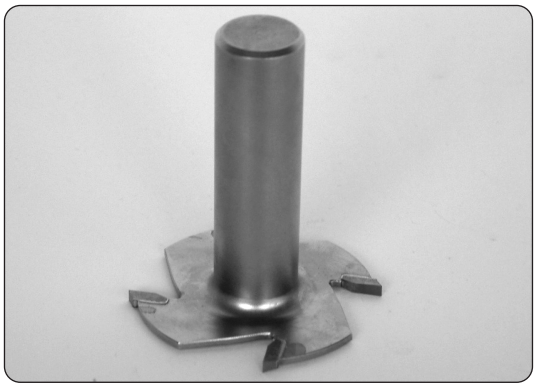
Codice *Code*	**D** *D*	**S** *S*	**Giri Max** *Rpm max*	**Cod. Prezzo** *Price Code*	**Codice** *Code*	**D** *D*	**S** *S*	**Giri Max** *Rpm max*	**Cod. Prezzo** *Price Code*
4035.008.010 *	8	10	24.000	H14	4035.020.015	20	15	20.000	L15
4035.010.010 *	10	10	24.000	L14	4035.020.020	20	20	20.000	D16
4035.010.015 *	10	15	24.000	L14	4035.020.025	20	25	20.000	G16
4035.012.010 *	12	10	24.000	M14	4035.020.030	20	30	20.000	L16
4035.012.015 *	12	15	24.000	M14	4035.020.040	20	40	20.000	E17
4035.012.020 *	12	20	24.000	A15	4035.030.015	30	15	20.000	D16
4035.015.015	15	15	24.000	C15	4035.030.020	30	20	20.000	L16
4035.015.020	15	20	20.000	F15	4035.030.025	30	25	20.000	B17
4035.015.025	15	25	20.000	L15	4035.030.030	30	30	20.000	E17
4035.015.030	15	30	20.000	B16	4035.030.040	30	40	20.000	M17

*** HW integrale/*Solid carbide***



4065

FRESE PANTOGRAFO PER CANALI
GROOVING CNC ROUTER CUTTERS



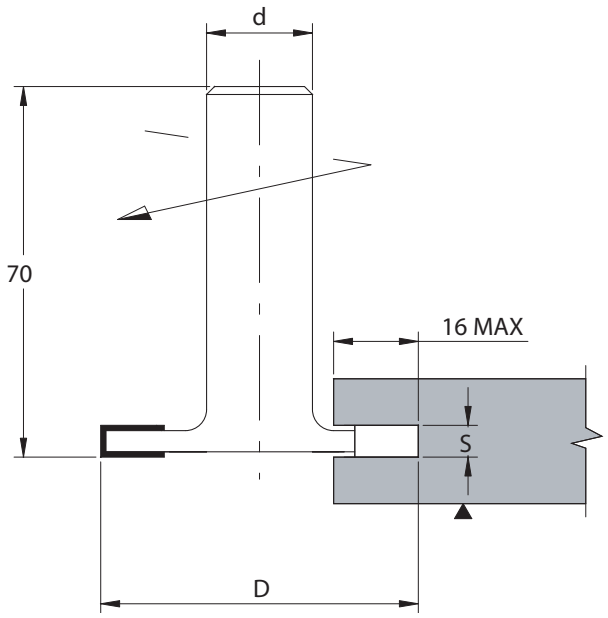
HW **MEC** **Z=4**

APPLICAZIONE/*APPLICATION*:
Realizzazione di canali su pannelli in legno o MDF.
Grooving router cutter for solid wood or MDF panels.

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

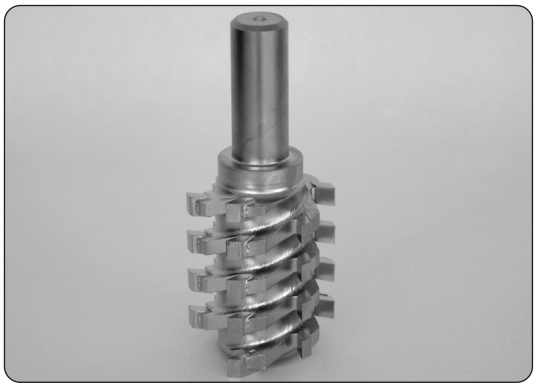
INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno riportato.
Si costruiscono con 4 taglienti diritti e attacco cilindrico shank d. 20x50.
Manufactured with brazed micrograin solid carbide.
Produced with 4 cutting edges and cylindrical shank d. 20x50.

Codice *Code*	**D** *D*	**S** *S*	**Giri Max** *Rpm max*	**Cod. Prezzo** *Price Code*
4065.060.003	60	3	18.000	D16
4065.060.004	60	4	18.000	F16
4065.060.005	60	5	18.000	L16
4065.060.006	60	6	18.000	B17
4065.060.008	60	8	18.000	D17
4065.060.010	60	10	18.000	G17



4095

FRESE PER PANTOGRAFI MULTITAGLIENTI
MULTICUT CNC ROUTER CUTTER



APPLICAZIONE/*APPLICATION*:
Contornatura, sgrossatura su legni teneri, duri, compensati etc...
Roughing cut on solid soft wood, hard wood, plywood etc...

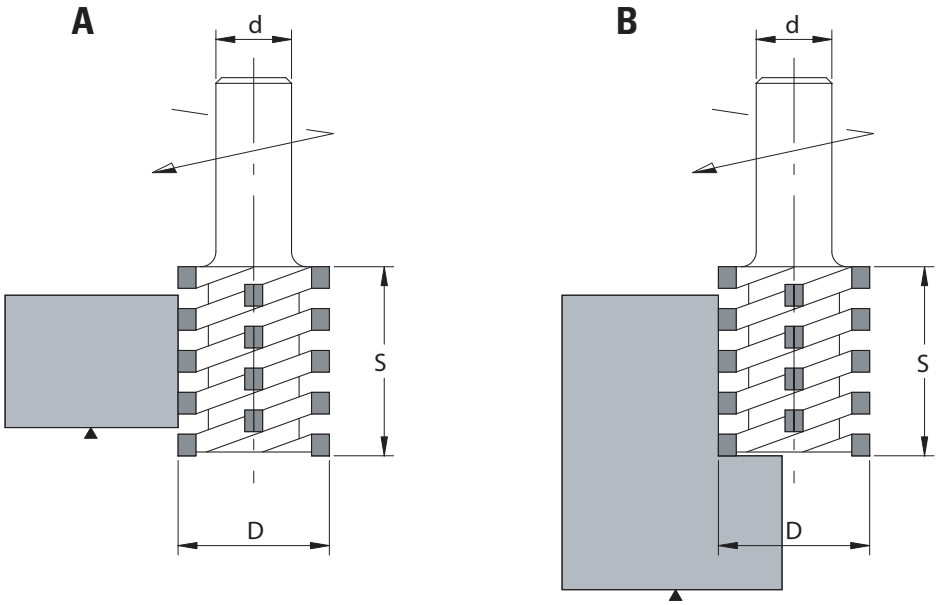
MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con 4,6 o 8 taglienti frazionati ad andamento elicoidale. Si ottiene una notevole diminuzione della rumorosità ed aumento della velocità di avanzamento. Fornite con attacco cilindrico d. 20x50. Per attacchi conici aumento 15%.
Manufactured with 4.6 or 8 spiral cut. High noise reduction and high feed speed. Supplied with cylindrical shank d. 20x50. Increase of 15% for tapered shanks.

HW **MEC**

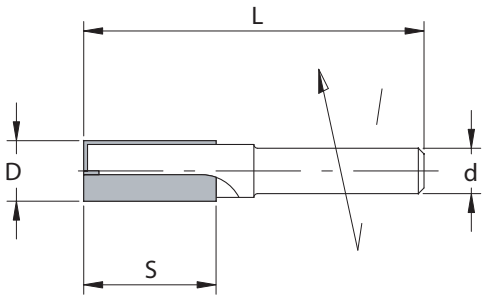
Codice *Code*	**D** *D*	**S** *S*	**Z** *Z*	**Giri Max** *Rpm max*	**Codice Prezzo** *Price Code*
4095.020.034	20	30	4	20.000	C24
4095.020.054	20	50	4	18.000	B25
4095.020.064	20	60	4	18.000	H25
4095.030.036	30	30	6	20.000	M21
4095.030.056	30	50	6	18.000	B24
4095.030.066	30	60	6	18.000	G24
4095.040.036	40	30	6	20.000	M22
4095.040.056	40	50	6	18.000	C25
4095.040.066	40	60	6	18.000	F25
4095.050.036	50	30	6	18.000	M22
4095.050.038	50	30	8	18.000	C24
4095.050.056	50	50	6	18.000	C25
4095.050.058	50	50	8	18.000	G26
4095.050.066	50	60	6	18.000	F25
4095.050.068	50	60	8	18.000	A27
4095.060.056	60	50	6	18.000	C25
4095.060.058	60	50	8	18.000	H26
4095.060.066	60	60	6	18.000	G25
4095.060.068	60	60	8	18.000	C27

*** Tipo "B" aumento 20%/*Type "B" increase 20%***



4145 - 4150

FRESE PANTOGRAFO FORA E CONTORNA
CNC STRAIGHT ROUTER CUTTERS



APPLICAZIONE/*APPLICATION*:
Esecuzione di fresature, incastri e canali.
Cutting and grooving router bit

MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con taglienti in HW integrale micrograno fino al d. 10. Oltre in HW riportato. Con due taglienti diritti e taglio di testa per forare. Giri 16.000-30.000 min^{-1}.
Manufactured by micrograin solid carbide up to d. 10. From d. 12 made with brazed HW. Produced with 2 straight cutting edges plus end cut for plunging. RPM 16.000-30.000 min^{-1}.

HW **Z=2**

Art. 4145 - d=10 mm

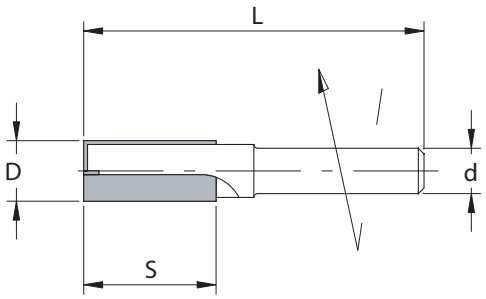
Codice *Code*	**D** *D*	**S** *S*	**L** *L*	**Cod. Prezzo** *Price Code*
4145.040.013 *	4	13	49	C05
4145.050.015 *	5	15	49	C05
4145.060.016 *	6	16	53	E05
4145.070.020 *	7	20	55	A06
4145.080.023 *	8	23	60	D06
4145.100.023 *	10	23	70	G06
4145.100.040 *	10	40	87	E07
4145.120.023	12	23	70	F06
4145.120.040	12	40	87	D07
4145.140.023	14	23	70	H06
4145.140.040	14	40	87	H07
4145.150.023	15	23	70	B07
4145.160.023	16	23	70	C07
4145.160.045	16	45	87	D08
4145.180.023	18	23	70	E07
4145.180.045	18	45	87	M08
4145.200.023	20	23	70	H07
4145.200.045	20	45	87	C09
4145.220.023	22	23	70	E08
4145.240.023	24	23	70	M08

Art. 4150 - d=12 mm

Codice *Code*	**D** *D*	**S** *S*	**L** *L*	**Cod. Prezzo** *Price Code*
4150.100.035	10	35	90	B07
4150.120.035	12	35	90	C07
4150.120.045	12	45	90	B09
4150.140.035	14	35	90	H07
4150.140.050	14	50	100	E11
4150.160.035	16	35	90	A08
4150.160.050	16	50	100	B12
4150.180.035	18	35	90	E08
4150.180.050	18	50	100	F12
4150.200.035	20	35	90	B09
4150.200.050	20	50	100	B13
4150.220.035	22	35	90	D09
4150.240.035	24	35	90	F09

*** HW integrale/*Solid carbide***

FRESE PANTOGRAFO FORA E CONTORNA
CNC STRAIGHT ROUTER CUTTERS



APPLICAZIONE/*APPLICATION*:
Esecuzione di fresature, incastri e canali.
Cutting and grooving router bit

MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con taglienti in HW integrale micrograno fino al d. 10. Oltre in HW riportato. Con due taglienti diritti e taglio di testa per forare. Giri 16.000-30.000 min^{-1}.
Manufactured by micrograin solid carbide up to d. 10. From d. 12 made with brazed HW. Produced with 2 straight cutting edges plus end cut for plunging. RPM 16.000-30.000 min^{-1}.

HW **Z=2**

Art. 4155 - d=6 mm

Codice *Code*	D *D*	S *S*	L *L*	Cod. Prezzo *Price Code*
4155.030.011 *	3	11	51	D04
4155.040.011 *	4	11	51	D04
4155.050.011 *	5	11	51	D04
4155.050.016 *	5	16	55	H04
4155.060.019 *	6	19	51	D04
4155.060.025 *	6	25	57	G04
4155.070.019 *	7	19	51	F04
4155.080.019 *	8	19	51	F04
4155.080.025 *	8	25	57	M04
4155.080.032 *	8	32	63	B05
4155.090.019	9	19	51	D04
4155.100.019	10	19	51	L04
4155.100.025	10	25	57	B05
4155.100.032	10	32	63	C05
4155.110.019	11	19	51	M04
4155.120.019	12	19	51	M04
4155.120.025	12	25	57	C05
4155.120.032	12	32	63	E05
4155.130.019	13	19	51	A05
4155.140.019	14	19	51	A05
4155.150.019	15	19	51	C05
4155.150.025	15	25	57	F05
4155.150.032	15	32	63	H05
4155.160.019	16	19	51	C05
4155.160.025	16	25	57	F05
4155.160.032	16	32	63	H05
4155.180.019	18	19	51	F05
4155.200.019	20	19	51	F05

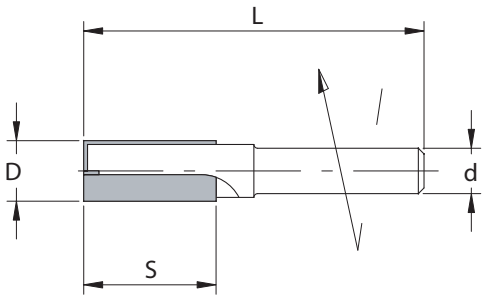
Art. 4160 - d=8 mm

Codice *Code*	D *D*	S *S*	L *L*	Cod. Prezzo *Price Code*
4160.030.011 *	3	11	51	D04
4160.040.011 *	4	11	51	D04
4160.050.011 *	5	11	51	D04
4160.050.016 *	5	16	55	H04
4160.060.019 *	6	19	51	D04
4160.060.025 *	6	25	57	G04
4160.070.019 *	7	19	51	F04
4160.080.019 *	8	19	51	F04
4160.080.025 *	8	25	57	M04
4160.080.032 *	8	32	63	B05
4160.090.019	9	19	51	D04
4160.100.019	10	19	51	L04
4160.100.025	10	25	57	B05
4160.100.032	10	32	63	C05
4160.110.019	11	19	51	M04
4160.120.019	12	19	51	M04
4160.120.025	12	25	57	C05
4160.120.032	12	32	63	E05
4160.130.019	13	19	51	A05
4160.140.019	14	19	51	A05
4160.140.025	14	25	57	F05
4160.150.019	15	19	51	C05
4160.160.019	16	19	51	C05
4160.160.025	16	25	57	F05
4160.160.032	16	32	63	H05
4160.180.019	18	19	51	F05
4160.200.019	20	19	51	F05

*** HW integrale/*Solid carbide***

4165 - 4170

FRESE PANTOGRAFO FORA E CONTORNA
CNC STRAIGHT ROUTER CUTTERS



APPLICAZIONE/*APPLICATION*:
Esecuzione di fresature, incastri e canali.
Cutting and grooving router bit

MACCHINA/*MACHINE*:
Pantografo CNC, pantografi manuali/*CNC router, manual routers.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione con taglienti in HW integrale micrograno fino al d. 10. Oltre in HW riportato. Con due taglienti diritti e taglio di testa per forare. Giri 16.000-30.000 min^{-1}.
Manufactured by micrograin solid carbide up to d. 10. From d. 12 made with brazed HW. Produced with 2 straight cutting edges plus end cut for plunging.
RPM 16.000-30.000 min^{-1}.

HW **Z=2**

Art. 4165 - d=9,5x20 mm

Codice *Code*	**D** *D*	**S** *S*	**L** *L*	**Cod. Prezzo** *Price Code*
4165.030.008 *	3	8	38	M04
4165.040.010 *	4	10	39	M04
4165.050.012 *	5	12	41	M04
4165.060.016 *	6	16	43	C05
4165.070.018 *	7	18	45	E05
4165.080.020 *	8	20	48	G05
4165.090.022 *	9	22	52	B06
4165.100.024 *	10	24	52	D06
4165.100.035 *	10	35	65	M06
4165.110.024	11	24	52	H06

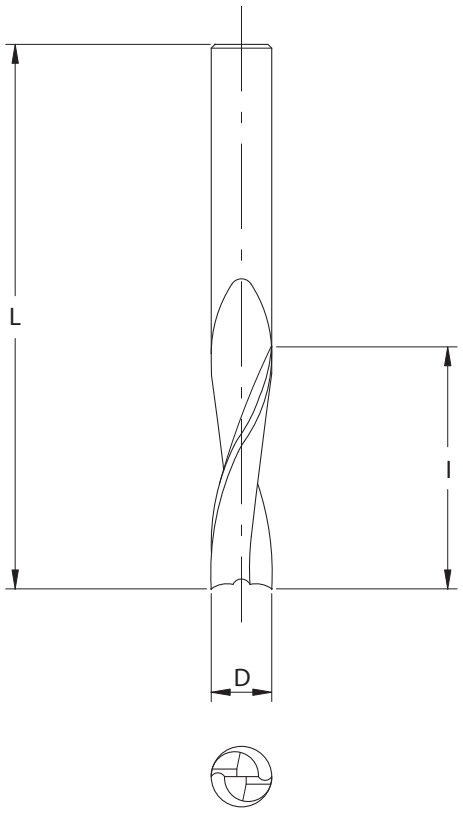
Art. 4170 - d=12x20 mm

Codice *Code*	**D** *D*	**S** *S*	**L** *L*	**Cod. Prezzo** *Price Code*
4170.120.026	12	26	52	H06
4170.120.040 *	12	40	70	G11
4170.130.026	13	26	52	L06
4170.140.028	14	28	56	L06
4170.150.030	15	30	60	G07
4170.160.032	16	32	60	H07
4170.180.035	18	35	64	D08
4170.200.038	20	38	68	M08
4170.220.040	22	40	72	C09
4170.240.040	24	40	72	F09
4170.250.040	25	40	72	M09

*** HW integrale/*Solid carbide***

4175 - 4176

FRESE ELICOIDALI HW INTEGRALE Z=2 (finitura)
SOLID HW SPIRAL ROUTER CUTTERS Z=2 (finish cut)



ELICA TRAENTE / UP-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Forare e contornare su legno massiccio e suoi derivati (truciolare - MDF -HDF).
For boring and sizing on solid wood, chipboard and fibre materials (MDF - HDF).

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 2 taglienti ad elica traente per ottima finitura sul lato inferiore del pannello. Scarico del truciolo verso l`alto.
Manufactured with micrograin solid carbide. With 2 positive spiral cutting edges for an excellent finishing on the bottom of the workpiece. Upward chip evacuation.

Dx/*Rh* - Z = 2

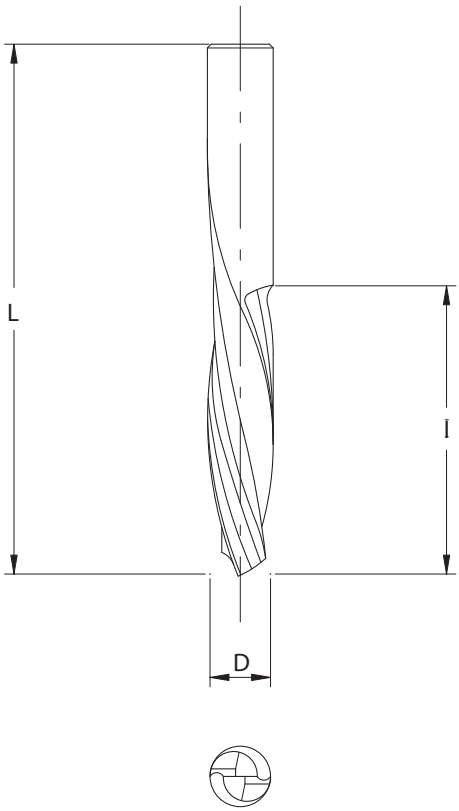
Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4175.030.012	3	12	40	L03
4175.040.012	4	15	40	D04
4175.050.017	5	16	50	L04
4175.060.017	6	17	50	L05
4175.060.027	6	25	60	D06
4175.080.022	8	22	63	F07
4175.080.032	8	32	72	E08
4175.100.032	10	32	72	D10
4175.100.042	10	42	100	D12
4175.120.032	12	32	73	D13
4175.120.042	12	42	100	F14
4175.120.052	12	52	100	B15
4175.140.042	14	42	100	H16
4175.140.052	14	52	100	L16
4175.160.042	16	42	100	F17
4175.160.052	16	52	100	L17
4175.160.062	16	62	106	D18
4175.180.052	18	52	100	B19
4175.180.072	18	75	125	F20
4175.200.052	20	52	100	A21
4175.200.072	20	75	125	F22

Sx/*Lh* - Z = 2

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4176.030.012	3	12	40	B04
4176.040.012	4	15	40	G04
4176.050.017	5	16	50	B05
4176.060.017	6	17	50	C06
4176.060.027	6	25	60	H06
4176.080.022	8	22	63	A08
4176.080.032	8	32	72	A09
4176.100.032	10	32	72	M10
4176.100.042	10	42	100	B13
4176.120.032	12	32	73	A14
4176.120.042	12	42	100	M14
4176.120.052	12	52	100	F15
4176.140.042	14	42	100	C17
4176.140.052	14	52	100	D17
4176.160.042	16	42	100	B18
4176.160.052	16	52	100	E18
4176.160.062	16	62	106	A19
4176.180.052	18	52	100	H19
4176.180.072	18	75	125	A21
4176.200.052	20	52	100	G21
4176.200.072	20	75	125	C23

4180 - 4181

FRESE ELICOIDALI HW INTEGRALE Z=2 (finitura)
SOLID HW SPIRAL CUTTERS Z=2 (finish cut)



APPLICAZIONE/*APPLICATION*:
Forare e contornare su legno massiccio e suoi derivati (truciolare - MDF -HDF).
For boring and sizing on solid wood, chipboard and fibre materials (MDF - HDF).

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 2 taglienti ad elica negativa per ottima finitura sul lato superiore del pannello. Scarico del truciolo verso il basso.
Manufactured with micrograin solid carbide. With 2 negative spiral cutting edges for an excellent finishing on the top of the workpiece. Chip evacuation towards the bottom.

ELICA SPINGENTE / DOWN-CUT SPIRAL

Dx/*Rh* - Z = 2

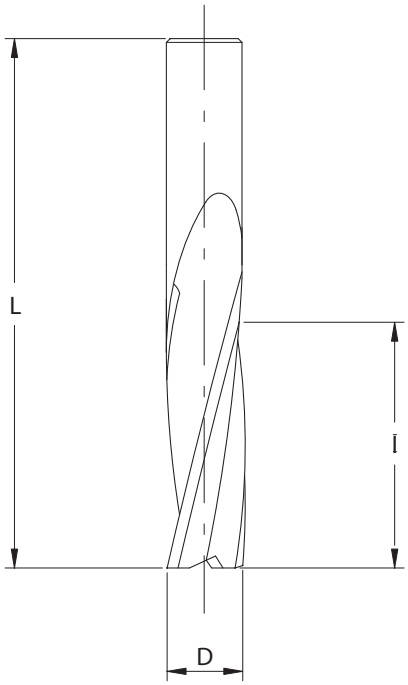
Codice *Code*	**D** *D*	**l** *l*	**L** *L*	**Codice Prezzo** *Price Code*
4180.030.012	3	12	40	L03
4180.040.012	4	15	40	D04
4180.050.017	5	16	50	L04
4180.060.017	6	17	50	L05
4180.060.027	6	25	60	D06
4180.080.022	8	22	63	F07
4180.080.032	8	32	72	E08
4180.100.032	10	32	72	D10
4180.100.042	10	42	100	D12
4180.120.032	12	32	73	D13
4180.120.042	12	42	100	F14
4180.120.052	12	52	100	B15
4180.140.042	14	42	100	H16
4180.140.052	14	52	100	L16
4180.160.042	16	42	100	F17
4180.160.052	16	52	100	L17
4180.160.062	16	62	106	D18
4180.180.052	18	52	100	B19
4180.180.072	18	75	125	F20
4180.200.052	20	52	100	A21
4180.200.072	20	75	125	F22

Sx/*Lh* - Z = 2

Codice *Code*	**D** *D*	**l** *l*	**L** *L*	**Codice Prezzo** *Price Code*
4181.030.012	3	12	40	B04
4181.040.012	4	15	40	G04
4181.050.017	5	16	50	B05
4181.060.017	6	17	50	C06
4181.060.027	6	25	60	H06
4181.080.022	8	22	63	A08
4181.080.032	8	32	72	A09
4181.100.032	10	32	72	M10
4181.100.042	10	42	100	B13
4181.120.032	12	32	73	A14
4181.120.042	12	42	100	M14
4181.120.052	12	52	100	F15
4181.140.042	14	42	100	C17
4181.140.052	14	52	100	D17
4181.160.042	16	42	100	B18
4181.160.052	16	52	100	E18
4181.160.062	16	62	106	A19
4181.180.052	18	52	100	H19
4181.180.072	18	75	125	A21
4181.200.052	20	52	100	G21
4181.200.072	20	75	125	C23

4185 - 4186

FRESE ELICOIDALI HW INTEGRALE Z=3 (finitura)
SOLID HW SPIRAL ROUTER CUTTERS Z=3 (finish cut)



ELICA TRAENTE / UP-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Forare e contornare su legno massiccio e suoi derivati (truciolare - MDF -HDF).
For boring and sizing on solid wood, chipboard and fibre materials (MDF - HDF).

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 3 taglienti ad elica traente per ottima finitura sul lato inferiore del pannello. Scarico del truciolo verso l`alto.
Manufactured with micrograin solid carbide. With 3 positive spiral cutting edges for an excellent finishing on the bottom of the workpiece. Upward chip evacuation.

Dx/*Rh* - Z = 3

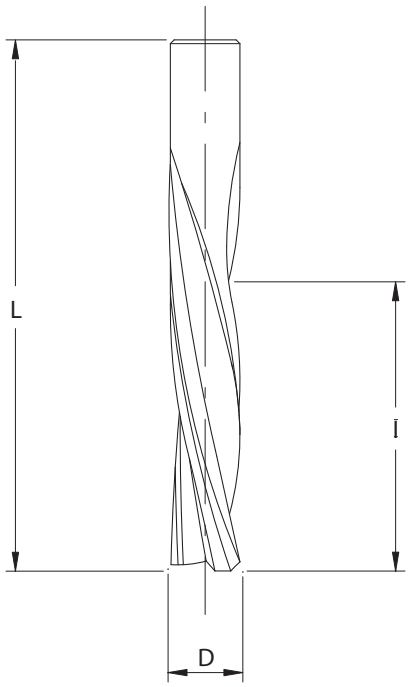
Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4185.080.022	8	22	63	M07
4185.080.032	8	32	72	L08
4185.100.032	10	32	72	L10
4185.100.042	10	42	100	H12
4185.120.032	12	32	73	M13
4185.120.042	12	42	100	L14
4185.120.052	12	52	100	D15
4185.140.042	14	42	100	A17
4185.140.052	14	52	100	B17
4185.160.042	16	42	100	M17
4185.160.052	16	52	100	C18
4185.160.062	16	62	106	H18
4185.180.052	18	52	100	G19
4185.180.072	18	75	125	L20
4185.200.052	20	52	100	E21
4185.200.072	20	75	125	A23
4185.200.102	20	102	160	F25

Sx/*Lh* - Z = 3

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4186.080.022	8	22	63	E08
4186.080.032	8	32	72	E09
4186.100.032	10	32	72	E11
4186.100.042	10	42	100	G13
4186.120.032	12	32	73	C14
4186.120.042	12	42	100	B15
4186.120.052	12	52	100	L15
4186.140.042	14	42	100	G17
4186.140.052	14	52	100	H17
4186.160.042	16	42	100	F18
4186.160.052	16	52	100	M18
4186.160.062	16	62	106	F19
4186.180.052	18	52	100	B20
4186.180.072	18	75	125	D21
4186.200.052	20	52	100	A22
4186.200.072	20	72	125	H23

4190 - 4191

FRESE ELICOIDALI HW INTEGRALE Z=3 (finitura)
SOLID HW SPIRAL CUTTERS Z=3 (finish cut)





ELICA SPINGENTE / DOWN-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Forare e contornare su legno massiccio e suoi derivati (truciolare - MDF -HDF).
For boring and sizing on solid wood, chipboard and fibre materials (MDF - HDF).

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 3 taglienti ad elica negativa per ottima finitura sul lato superiore del pannello. Scarico del truciolo verso il basso.
Manufactured with micrograin solid carbide. With 3 negative spiral cutting edges for an excellent finishing on the top of the workpiece. Chip evacuation towards the bottom.

Dx/*Rh* - Z = 3

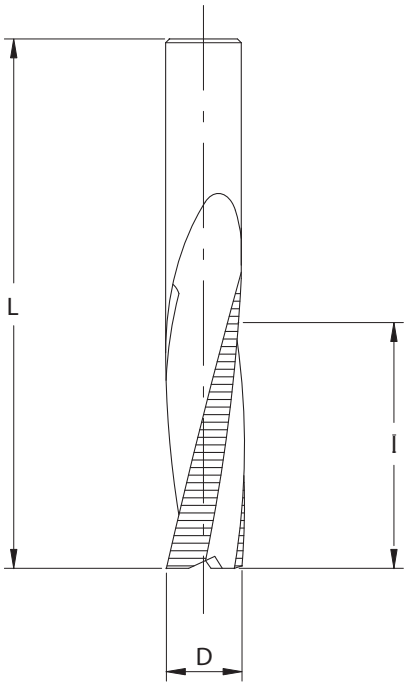
Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4190.080.022	8	22	63	M07
4190.080.032	8	32	72	L08
4190.100.032	10	32	72	L10
4190.100.042	10	42	100	H12
4190.120.032	12	32	73	M13
4190.120.042	12	42	100	L14
4190.120.052	12	52	100	D15
4190.140.042	14	42	100	A17
4190.140.052	14	52	100	B17
4190.160.042	16	42	100	M17
4190.160.052	16	52	100	C18
4190.160.062	16	62	106	H18
4190.180.052	18	52	100	G19
4190.180.072	18	75	125	L20
4190.200.052	20	52	100	E21
4190.200.072	20	75	125	A23

Sx/*Lh* - Z = 3

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4191.080.022	8	22	63	E08
4191.080.032	8	32	72	E09
4191.100.032	10	32	72	E11
4191.100.042	10	42	100	G13
4191.120.032	12	32	73	C14
4191.120.042	12	42	100	B15
4191.120.052	12	52	100	L15
4191.140.042	14	42	100	G17
4191.140.052	14	52	100	H17
4191.160.042	16	42	100	F18
4191.160.052	16	52	100	M18
4191.160.062	16	62	106	F19
4191.180.052	18	52	100	B20
4191.180.072	18	75	125	D21
4191.200.052	20	52	100	A22
4191.200.072	20	72	125	H23

4195 - 4196

FRESE ELICOIDALI HW INTEGRALE Z=3 (sgrossatura)
HW SPIRAL ROUTER CUTTERS Z=3 (rough cut)





ELICA TRAENTE / UP-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Forare e contornare su legno massiccio e suoi derivati (truciolare - MDF -HDF).
For boring and sizing on solid wood, chipboard and fibre materials (MDF - HDF).

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 3 taglienti ad elica traente. Finitura migliore sul lato inferiore del pannello. Scarico del truciolo verso l`alto.
Manufactured with micrograin solid carbide. With 3 positive spiral cutting edges for face side down workpieces. Upward chip evacuation.

Dx/*Rh* - Z = 3

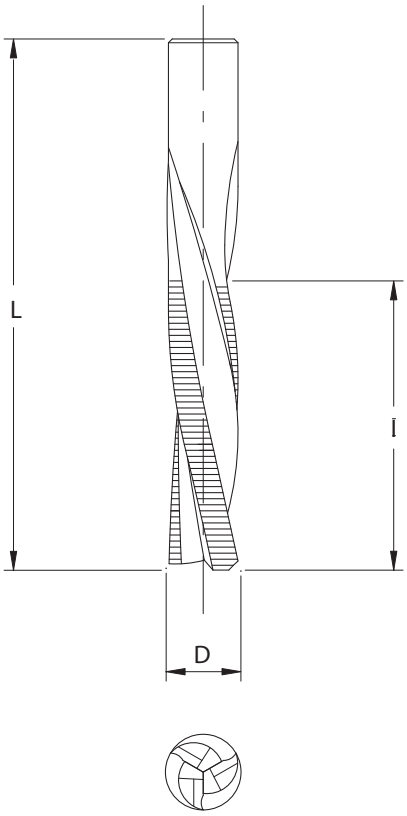
Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4195.080.022	8	22	63	G08
4195.080.032	8	32	72	G09
4195.100.032	10	32	72	M11
4195.100.042	10	42	100	M13
4195.120.032	12	32	72	E14
4195.120.042	12	42	100	E15
4195.120.052	12	52	100	B16
4195.140.042	14	42	100	L17
4195.140.052	14	52	100	D18
4195.160.042	16	42	100	E19
4195.160.052	16	52	100	L19
4195.160.062	16	62	106	B20
4195.180.052	18	52	100	H20
4195.180.072	18	75	125	B22
4195.200.052	20	52	100	F22
4195.200.072	20	75	125	A24
4195.200.102	20	102	160	C26
4195.250.052	25	52	100	H29
4195.250.102	25	102	160	M30

Sx/*Lh* - Z = 3

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4196.080.022	8	22	63	C09
4196.080.032	8	32	72	D10
4196.100.032	10	32	72	H12
4196.100.042	10	42	100	D14
4196.120.032	12	32	72	L14
4196.120.042	12	42	100	L15
4196.120.052	12	52	100	G16
4196.140.042	14	42	100	E18
4196.140.052	14	52	100	A19
4196.160.042	16	42	100	M19
4196.160.052	16	52	100	D20
4196.160.062	16	62	106	G20
4196.180.052	18	52	100	C21
4196.180.072	18	75	125	H22
4196.200.052	20	52	100	C23
4196.200.072	20	75	125	G24

4200 - 4201

FRESE ELICOIDALI HW INTEGRALE Z=3 (sgrossatura)
HW SPIRAL ROUTER CUTTERS Z=3 (rough cut)



ELICA SPINGENTE / DOWN-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Forare e contornare su legno massiccio e suoi derivati (truciolare - MDF -HDF).
For boring and sizing on solid wood, chipboard and fibre materials (MDF - HDF).

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 3 taglienti ad elica spingente. Finitura migliore sul lato superiore del pannello.
Scarico del truciolo verso il basso.
Manufactured with micrograin solid carbide. With 3 negative spiral cutting edges for face side up workpieces. Chip evacuation towards the bottom.

Dx/*Rh* - Z = 3

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4200.080.022	8	22	63	G08
4200.080.032	8	32	72	G09
4200.100.032	10	32	72	M11
4200.100.042	10	42	100	M13
4200.120.032	12	32	72	E14
4200.120.042	12	42	100	E15
4200.120.052	12	52	100	B16
4200.140.042	14	42	100	L17
4200.140.052	14	52	100	D18
4200.160.042	16	42	100	E19
4200.160.052	16	52	100	L19
4200.160.062	16	62	106	B20
4200.180.052	18	52	100	H20
4200.180.072	18	75	125	B22
4200.200.052	20	52	100	F22
4200.200.072	20	75	125	A24
4200.200.102	20	102	160	C26

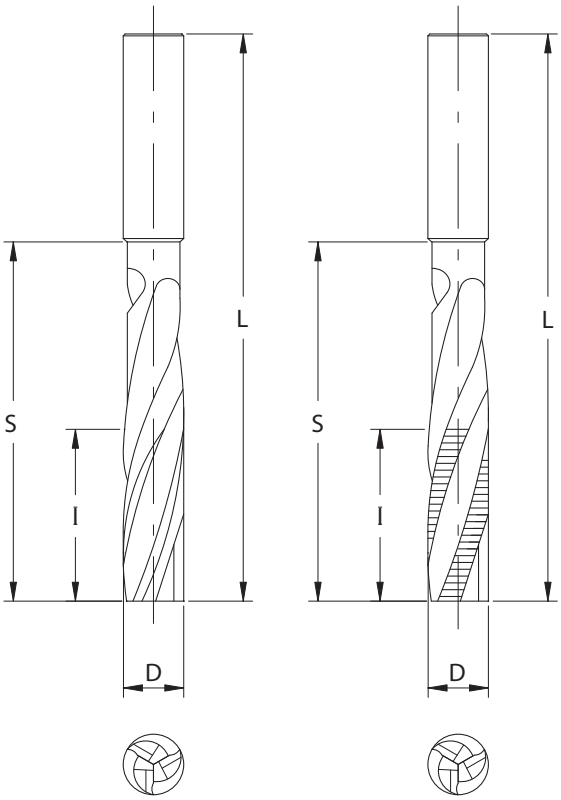
Sx/*Lh* - Z = 3

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4201.080.022	8	22	63	C09
4201.080.032	8	32	72	D10
4201.100.032	10	32	72	H12
4201.100.042	10	42	100	D14
4201.120.032	12	32	72	L14
4201.120.042	12	42	100	L15
4201.120.052	12	52	100	G16
4201.140.042	14	42	100	E18
4201.140.052	14	52	100	A19
4201.160.042	16	42	100	M19
4201.160.052	16	52	100	D20
4201.160.062	16	62	106	G20
4201.180.052	18	52	100	C21
4201.180.072	18	75	125	H22
4201.200.052	20	52	100	C23
4201.200.072	20	75	125	G24

4204 - 4205

FRESE ELICOIDALI HW INTEGRALE Z=3 PER SERRATURE
SOLID HW SPIRAL ROUTER CUTTERS Z=3 FOR LOCK-CASE

ART. 4204 ART. 4205

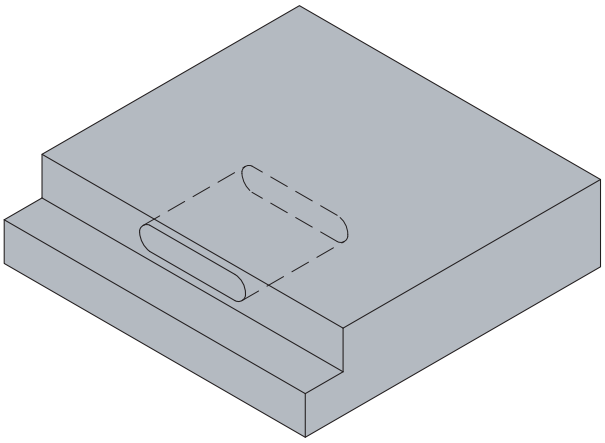


ELICA TRAENTE / UP-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Realizzazione asole per incasso serrature porte.
For cutting of lock-cases and face-plates in doors.

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 3 taglienti ad elica traente con o senza rompitruciolo. Scarico del truciolo verso l`alto.
Manufactured with micrograin solid carbide . With 3 positive spiral cutting edges with or without chip-breaker. Upward chip evacuation.



Art. 4204 - **Dx/***Rh* - **Z = 3**

Codice *Code*	**D** *D*	**I** *I*	**S** *S*	**L** *L*	**Codice Prezzo** *Price Code*
4204.140.100	14	45	95	150	G20
4204.160.100	16	45	95	150	E21
4204.180.100	18	45	95	150	F23
4204.200.100	20	45	95	150	D24

Art. 4205 - **Dx/***Rh* - **Z = 3**

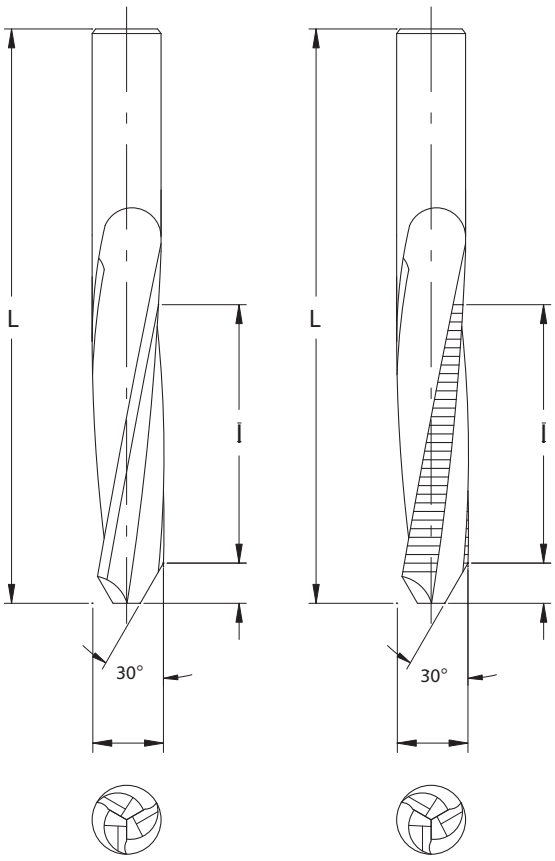
Codice *Code*	**D** *D*	**I** *I*	**S** *S*	**L** *L*	**Codice Prezzo** *Price Code*
4205.140.100	14	45	95	150	L21
4205.160.100	16	45	95	150	E22
4205.180.100	18	45	95	150	H23
4205.200.100	20	45	95	150	G24

4206 - 4207

FRESE ELICOIDALI HW INTEGRALE Z=3 PER FORO MANIGLIA
SOLID HW SPIRAL ROUTER CUTTERS Z=3 LATCHOLE AND KEYHOLE

BUP UTENSILI

ART. 4206 ART. 4207

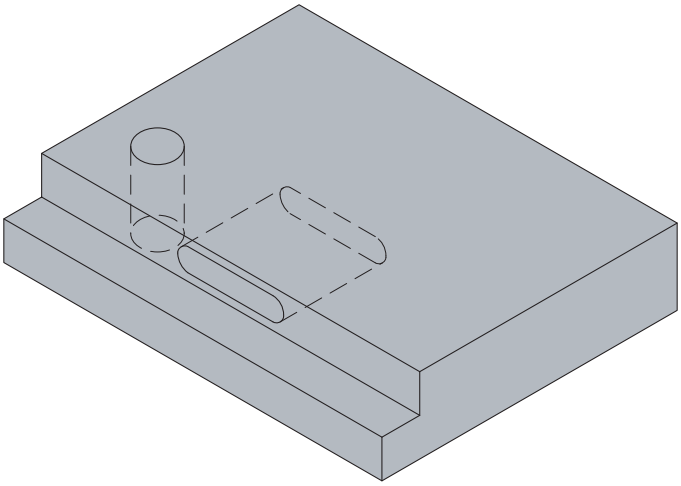


ELICA TRAENTE / UP-CUT SPIRAL

APPLICAZIONE/*APPLICATION*:
Realizzazione del foro chiave e maniglia per porte.
For plunge-cutting of latcholes and keyholes on door manufacturing.

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 3 taglienti ad elica traente con o senza rompitruciolo. Scarico del truciolo verso l`alto.
Manufactured with micrograin solid carbide. With 3 positive spiral cutting edges with or without chip-breaker. Upward chip evacuation.



Art. 4206 - **Dx/***Rh* - **Z = 3**

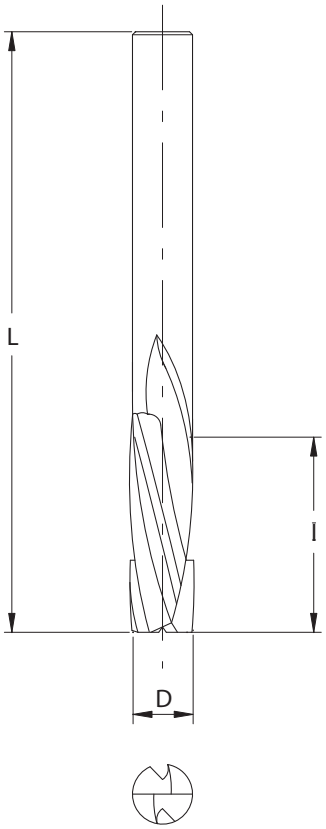
Codice *Code*	**D** *D*	**l** *l*	**B** *B*	**L** *L*	**Codice Prezzo** *Price Code*
4206.120.000	12	45	7	100	B17
4206.140.000	14	44	8	100	D19
4206.160.000	16	53	9	106	L20
4206.180.000	18	65	10	125	A23
4206.200.000	20	64	11	125	C25

Art. 4207 - **Dx/***Rh* - **Z = 3**

Codice *Code*	**D** *D*	**l** *l*	**B** *B*	**L** *L*	**Codice Prezzo** *Price Code*
4207.120.000	12	45	7	100	B18
4207.140.000	14	44	8	100	F20
4207.160.000	16	53	9	106	B22
4207.180.000	18	65	10	125	E24
4207.200.000	20	64	11	125	D26

4210 - 4211

FRESE ELICOIDALI HW INTEGRALE Z=2+2 A DOPPIA ELICA
SOLID HW SPIRAL ROUTER CUTTERS Z=2+2 UP DOWN SPIRAL



ELICHE CONTRAPPOSTE / UP-DOWN SPIRAL

APPLICAZIONE/*APPLICATION*:
Contornatura di pannelli in truciolare, MDF - HDF nobilitati e laminati.
Sizing of paper, plastic coated, veneered chipboard or MDF-HDF panels.

MACCHINA/*MACHINE*:
Pantografo CNC/*CNC router.*

INFORMAZIONI TECNICHE/*TECHNICAL INFORMATION*:
Esecuzione in HW integrale micrograno. Si costruiscono con 2+2 taglienti ad eliche contrapposte per ottima finitura su entrambi i lati del pannello.
Manufactured with micrograin solid carbide. With 2+2 up-down spiral cutting edges for excellent finishing on top and bottom workpiece faces.

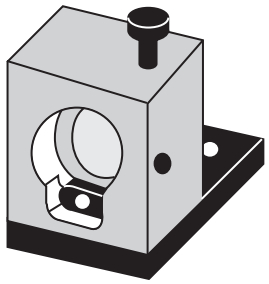
Dx/*Rh* - Z = 2+2

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4210.080.032	8	32(16+16)	72	D15
4210.100.032	10	32(16+16)	72	H15
4210.100.042	10	42(15+27)	100	A16
4210.120.042	12	42(15+27)	100	G18
4210.120.052	12	52(15+37)	100	L18
4210.140.042	14	42(15+27)	100	D20
4210.140.052	14	52(15+37)	100	F20
4210.160.042	16	42(15+27)	100	F21
4210.160.052	16	52(15+37)	100	L21
4210.160.072	16	75(27+48)	125	B23
4210.180.052	18	52(15+37)	100	H22
4210.200.052	20	52(15+37)	100	A25
4210.200.072	20	72(12+63)	120	C25

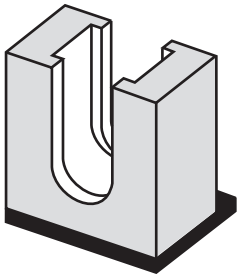
Sx/*Lh* - Z = 2+2

Codice *Code*	**D** *D*	**I** *I*	**L** *L*	**Codice Prezzo** *Price Code*
4211.080.032	8	32(16+16)	72	M15
4211.100.032	10	32(16+16)	72	C16
4211.100.042	10	42(15+27)	100	H16
4211.120.042	12	42(15+27)	100	F19
4211.120.052	12	52(15+37)	100	H19
4211.140.042	14	42(15+27)	100	A21
4211.140.052	14	52(15+37)	100	C21
4211.160.042	16	42(15+27)	100	D22
4211.160.052	16	52(15+37)	100	H22
4211.160.072	16	75(27+48)	125	A24
4211.180.052	18	52(15+37)	100	G23
4211.200.052	20	52(15+37)	100	M25
4211.200.072	20	72(12+63)	120	B26

SUPPORTO DI BLOCCAGGIO MANDRINI
CHUCKS LOCKING SUPPORT



Codice *Code*	**Tipo** *Type*	**Macchina** *Machine*	**Codice Prezzo** *Price Code*
4300.000.001	ISO 30	Biesse	C19
4300.000.002	ISO 30	Morbidelli	H19



Codice *Code*	**Tipo** *Type*	**Macchina** *Machine*	**Codice Prezzo** *Price Code*
4300.000.005	HSK 63 F	-	D22