TOOL HOLDERS

Useful information:

SISTEMI has always been known for the high quality of the products offered. Keywords of this success are the **attention to production materials** and the use of the most modern construction techniques together with more accurate controls and the continuous research of innovative products.
A large complete stock helps even more our customers to be more competitive in the market.
The tool holders made of stainless steel (see page 7.23) allow to solve permanently any possibility of oxidation.

All our standard collet chucks are balanced at G 6.3 (24.000 RPM) and, on request, can be also at G 2.5 (36.000 RPM).
The new collet chucks Klein OVERLINE (see pages 7.18, 7.19) are balanced at G 2.5 36.000 RPM for performing special executions.

Use instructions:

1) The collect chuck may be used only on router machines and machining centers for processing wood and wood-based material with comparable cutting characteristics.
2) The instructions of the machine manufacturer regarding the suitability of the clamping device have to be observed.
3) The direction of rotation marked on the clamping device has to be observed and followed. The direction of rotation of the tool and the collet chuck has to be the same.
4) Do not exceed the maximum RPM "n max" marked on the collet chuck. The maximum RPM of the system is determined by the tool, if the RPM of the tool is lower than that of the chuck.

Safety regulations:

1) All European and national safety regulations shall be adhered to include the safety requirements as set out in **EN 847-1, EN 847-2 and EN 847-3**.
2) The clamping device has to be mounted, secured and started up as per instructions of the machine manufacturer. Check the machine set-up and the direction of the rotation.

Maintenance:

A regular and **proper cleaning** of mechanical components is critical to avoid jamming during processing operations and the consequent risk of a poor finishing of the piece or even tool breakage.

The worked pieces leave impurities and debris in the collets holes, in the seats of tool holders or electro-spindles. These should be therefore cleaned daily using the **right wipers** (see items T137 and X137 at page 7.40)

In order to avoid the risk of tool breakage during the job, make sure you answered the following questions:

1- Are you using the proper tool for the desired job?
2- Collets and tool holders are clean and the tool is inserted properly?
3- RPM and feed speed are correct?
4- Is the depth cut not too excessive for the material processed?
5- Are there any evident vibrations of the mechanical parts?
6- No right answer to your problem? Stop running parts and check with your "Klein" distributor.

If you have to contact your distributor of technical support, please have ready the following information:

a- Type of machine being used
b- Type of material being cut
c- Part number of tool, "Klein" item
d- RPM/feed speed/depth of cut
e- How long did the tool worked before it broke/damaged?
f- Have you already done this operation in the past using the same tool?

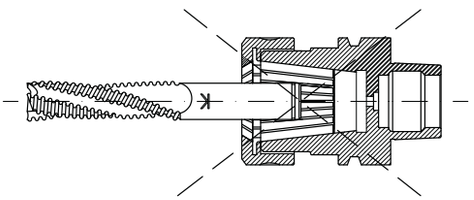
SAFETY NORMS

Table 1.1:
Calculation **of the minimum clamping length** (Safety regulation EN847-1).

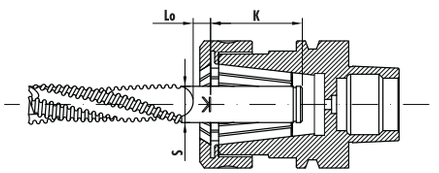
On the tool shank the minimum clamping length is marked.
The shank has to be clamped as far as possible, but at least up to the marking of the minimum clamping length (K).
The free shank length (Lo) should be as short as possible, granting a higher rigidity and smaller risk of tool breakage.

Shank diameter **S** (mm)	Min. clamping length K (mm)
S ≤ 10	K ≥ 20
10 < **S** < 25	K = S x 2
S ≥ 25	K = S x 1,8

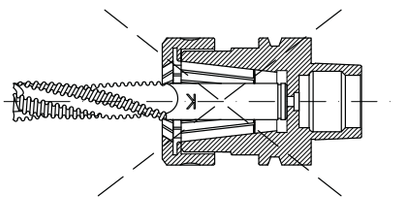
WRONG ASSEMBLING



OPTIMIZED CLAMPING LENGTH



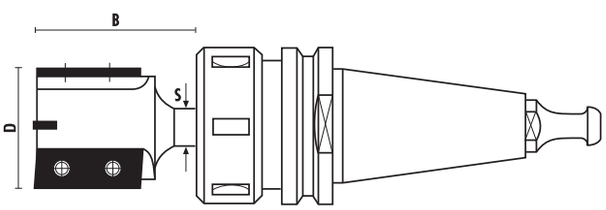
WRONG ASSEMBLING



Safety norm for the calculation of the minimum clamping length

D = Tool diameter
B = Maximun safe length of the tool
S = Shank diameter

COLLET CHUCKS ISO30



COLLET CHUCKS HSK63F

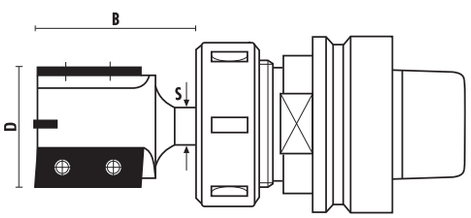


Table 2.1: Method for the calculation of the measure **B** for collet chucks ISO30

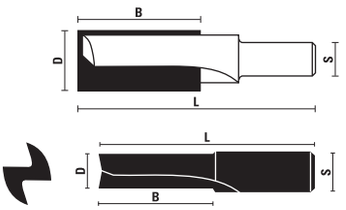
D (mm)	S (mm)								
	Ø 6	**Ø 8**	**Ø 10**	**Ø 12**	**Ø 14**	**Ø 16**	**Ø 18**	**Ø 20**	**Ø 25**
6	81								
8	66	94							
10	59	82	105						
12	53	73	94	115					
14	48	66	85	105	124				
16	44	61	78	96	114	133			
18	41	57	73	89	106	123	140		
20	38	53	68	84	99	115	132	148	
25		45	59	72	86	100	114	129	153
30		40	52	64	77	89	102	115	125
35			47	58	69	81	92	104	106
40			43	53	64	74	85	91	92
45				49	59	68	78	80	81
50				46	55	64	71	71	73
55					51	60	64	64	66
60					48	56	58	59	60
65					46	52	53	54	56
70						48	49	50	52
75						46	47	49	51
80							47	47	51
85								47	51
90								47	50
95								47	50
100								47	50
105									49
110									49

Table 2.2: Method for the calculation of the measure **B** for collet chucks HSK63F

D (mm)	S (mm)								
	Ø 6	**Ø 8**	**Ø 10**	**Ø 12**	**Ø 14**	**Ø 16**	**Ø 18**	**Ø 20**	**Ø 25**
6	81								
8	68	94							
10	59	82	105						
12	53	73	94	115					
14	48	66	85	105	124				
16	44	61	78	96	114	133			
18	41	57	73	89	106	123	140		
20	38	53	68	84	99	115	132	148	
25		45	59	72	86	100	114	129	165
30		40	52	64	77	89	102	115	147
35			47	58	69	81	92	104	133
40			43	53	64	74	85	95	123
45				49	59	68	78	88	114
50				46	55	64	73	83	106
55					51	60	69	78	100
60					48	56	65	73	94
65					46	53	61	69	90
70						51	59	66	85
75						48	55	63	82
80							53	60	78
85							51	58	75
90							49	56	72
95								56	70
100								52	68
105									65
110									64

HW ROUTER BITS Z=2

ART. T110

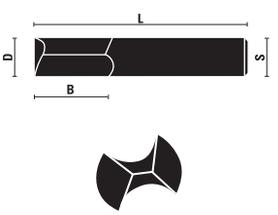


RH rotation	D	B	L	S
T110.030.R ▲	3	8	38	9,5x20
T110.040.R ▲	4	10	39	9,5x20
T110.050.R ▲	5	12	41	9,5x20
T110.060.R ▲	6	16	43	9,5x20
T110.070.R ▲	7	18	45	9,5x20
T110.080.R ▲	8	20	48	9,5x20
T110.081.R ▲	8	30	60	9,5x20
T110.090.R ▲	9	22	52	9,5x20
T110.100.R ▲	10	24	52	9,5x20
T110.101.R ▲	10	35	65	9,5x20
T110.110.R	11	30	60	9,5x20
T110.120.R	12	30	60	12x20
T110.121.R ▲	12	40	70	12x20
T110.130.R	13	30	60	12x20
T110.140.R	14	40	65	12x20
T110.150.R	15	40	65	12x20
T110.160.R	16	40	65	12x20
T110.180.R	18	40	70	12x20
T110.200.R	20	40	70	12x20
T110.220.R	22	40	70	12x20
T110.240.R	24	40	70	12x20
T110.250.R	25	40	70	12x20
T110.260.R	26	42	70	12x20
T110.280.R	28	42	70	12x20
T110.300.R	30	42	70	12x20

▲ Solid carbide

VHW ROUTER BITS Z=2

ART. T112

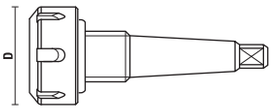


- **Solid carbide**
- Indicated for **plastic and acrylic material, plexiglass, polypropylene** etc.
- "O" flute straight

RH rotation	D	B	L	S
T112.050.R	5	12	48	5
T112.060.R	6	14	50	6
T112.080.R	8	18	55	8
T112.100.R	10	20	58	10
T112.120.R	12	26	64	12

CONCENTRIC CHUCKS S=MK2

ART. T116



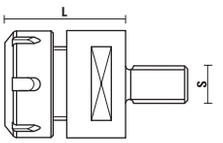
- Wrench art. Z052.301.N
- Spare parts see page 10.07

Supplied with nut (without collet)

Item	D	Shank	Clamping nut
T116.100.R	40	C.M. 2/FIL M20	Z091.000.R
T116.100.L	40	C.M. 2/FIL M20	Z091.000.L

CONCENTRIC CHUCKS

ART. T116



- Wrench art. Z052.301.N
- Spare parts see page 10.07

Item **X116**
Set in wooden box

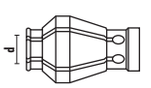
- With spare collets Art. T117
- To use on spindle moulder
- Supplied with nut (without collet)

RH rotation	S	L	Clamping nut
T116.500.R	M16	42	Z091.000.R
T116.501.R	M14	42	Z091.000.R
T116.502.R	M18	42	Z091.000.R
T116.503.R	M20	42	Z091.000.R

X116.500.R	Set with chuck M16 + 3 spring collets ∅ 6/8/12
X116.501.R	Set with chuck M14 + 3 spring collets ∅ 6/8/12
X116.502.R	Set with chuck M18 + 3 spring collets ∅ 6/8/12
X116.503.R	Set with chuck M20 + 3 spring collets ∅ 6/8/12

SPRING COLLETS

ART. T117

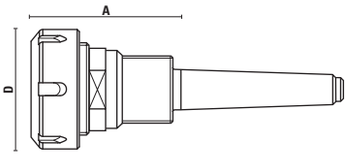


For Art. T116

Item	d	Item	d
T117.060.N	∅6	T117.110.N	∅11
T117.064.N	∅6,4	T117.120.N	∅12
T117.080.N	∅8	T117.127.N	∅12,7
T117.090.N	∅9	T117.130.N	∅13
T117.095.N	∅9,5	T117.140.N	∅14
T117.100.N	∅10		

COLLET CHUCKS MORSE TAPER

ART. T118

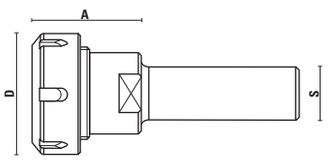


- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.

Item	Shank	A	D	Spring collets	Clamping nut	Rot.
T118.200.R	MK2 / FIL. M30	70	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.200.L	MK2 / FIL. M30	70	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.202.R	MK2 / FIL. M30	70	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.300.R	MK3 / FIL. M30	70	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.300.L	MK3 / FIL. M30	70	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.302.R	MK3 / FIL. M30	70	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH

COLLET CHUCKS CYL SHANK ∅ 20

ART. T118

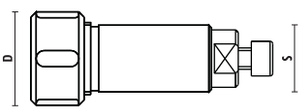


- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.

Item	S	A	D	Spring collets	Clamping nut	Rot.
T118.400.R	∅ 20	51	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.402.R	∅ 20	51	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH

COLLET CHUCKS CYL SHANK ∅ 25

ART. T118

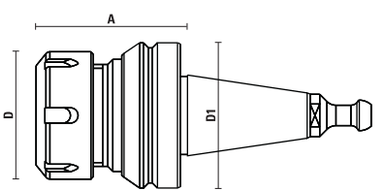


- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.28
- Threaded nut DIN 6388/EOC12
- For: **Weeke**

Item	S	D	Spring collets	Clamping nut	Rot.
T118.580.R	∅ 25	35	∅ 1÷12,7 (Art. T136/EOC12)	Z091.205.R	RH

COLLET CHUCKS ISO 30 TAPERED FLANGE

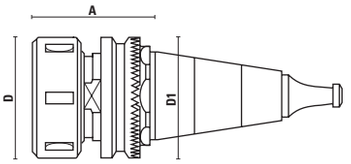
ART. T118



- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.
- Retaining pawl T118.891.R for: **Thermwood, Vitap**

Item	A	D	D_1	Spring collets	Clamping nut	Rot.
T118.680.R	58	50	57	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH

COLLET CHUCKS ISO 30
ART. T118



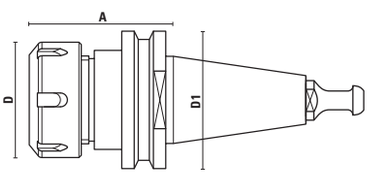
- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25, 7.27
- Threaded nut DIN 6499
- Threaded nut DIN 6388/EOC25
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499 - DIN 6388/EOC25. The "A" measure may be subject to variations depending on the diameter of the clamped tools

With anti-adherent surface treatment "**Impreglon**"

- Retaining pawl T118.790.R for: **Morbidelli, SCM**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.700.R	ISO 30	55	50	49	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.702.R	ISO 30	55	50	49	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.701.R	ISO 30	71	60	49	∅ 3÷25 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH
T118.711.R	ISO 30	71	60	49	∅ 3÷25 (Art. T124/EOC25)	Z091.202.R	RH
T118.711.L selling out	ISO 30	71	60	49	∅ 3÷25 (Art. T124/EOC25)	Z091.202.L	LH

COLLET CHUCKS ISO 30
ART. T118

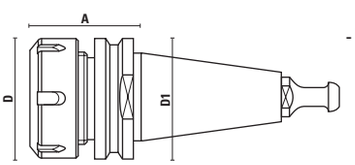


- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools

- Retaining pawl T118.891.R for: **Biesse** (after il 09/09/92), **Masterwood - Bulleri** (motor H.S.D.), **Vitap**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.796.R NEW	ISO 30	50	32	50	∅ 2÷10 (Art. T127/ER16)	Z091.105.R	RH
T118.797.R NEW	ISO 30	50	35	50	∅ 2÷12 (Art. T126/ER20)	Z091.104.R	RH
T118.798.R NEW	ISO 30	50	42	50	∅ 3÷16 (Art. T125/ER25)	Z091.103.R	RH

COLLET CHUCKS ISO 30
ART. T118



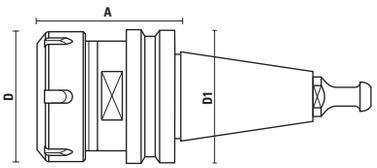
- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.

- Retaining pawl T118.891.R for: **Biesse** (after il 09/09/92), **Masterwood - Bulleri** (motor H.S.D.), **Vitap**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.800.R	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.800.L	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.802.R	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.830.R	ISO 30	60	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.830.L	ISO 30	60	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.L	LH
T118.832.R	ISO 30	60	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

COLLET CHUCKS ISO 30

ART. T118

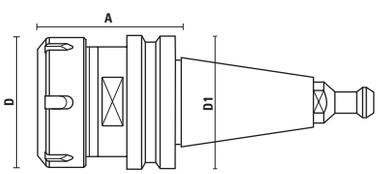


- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.
- Retaining pawl T118.891.R for: **Biesse** (after 09/09/92), **Masterwood - Bulleri** (motor H.S.D.), **Vitap**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.804.R	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.804.L	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.806.R	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.834.R	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.834.L	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.L	LH
T118.836.R	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

COLLET CHUCKS ISO 30

ART. T118



- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25, 7.28
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.
- Retaining pawl T118.792.R for: **Alberti, Vitap, Masterwood** (motor G. Colombo)

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.810.R	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.810.L	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.812.R	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.814.R	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.814.L	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.L	LH
T118.816.R	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

- Retaining pawl T118.791.R (DIN 69872) for: **Anderson, Busellato, Weeke, Ima, Bulleri, Maka, Cosmec, Reichenbacher**

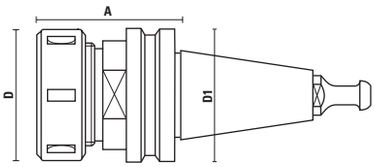
Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.820.R	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.820.L	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.822.R	ISO 30	68	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.824.R	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.824.L	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.L	LH
T118.826.R	ISO 30	68	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

- Retaining pawl T118.794.R for: **CMS** (flange ∅ 46)

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.880.R	ISO 30	52	50	46	∅ 3÷20 (Art. T134/ETS32)	Z091.301.R	RH
T118.881.R	ISO 30	52	50	46	∅ 3÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.882.R	ISO 30	57	63	46	∅ 4÷25 (Art. T135/ETS40)	Z091.302.R	RH
T118.883.R	ISO 30	57	63	46	∅ 4÷25 (Art. T123/ER40)	Z091.002.R	RH

COLLET CHUCKS ISO 30

ART. T118



- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.27
- Threaded nut DIN 6388 (EOC25)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN 6388 (EOC25). The "A" measure may be subject to variations depending on the diameter of the clamped tools.
- Retaining pawl T118.791.R (DIN 69872) for: **Anderson, Busellato, Weeke, Ima, Bulleri, Maka, Cosmec, Reichenbacher**

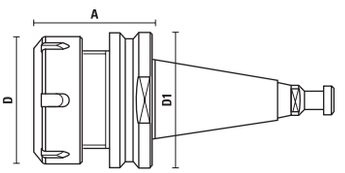
Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.828.R	ISO 30	68	60	50	∅ 3÷25 (Art. T124/EOC25)	Z091.202.R	RH
T118.829.R	ISO 30	68	60	50	∅ 3÷25 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH

- Retaining pawl T118.891.R for: **Biesse** (after 09/09/92), **Masterwood - Bulleri** (motor H.S.D.), **Vitap**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.838.R	ISO 30	68	60	50	∅ 3÷25 (Art. T124/EOC25)	Z091.202.R	RH
T118.839.R	ISO 30	68	60	50	∅ 3÷25 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH

COLLET CHUCKS ISO 30

ART. T118



- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.
- Retaining pawl T118.791.R for: electrospindles **Anderson, Elte**

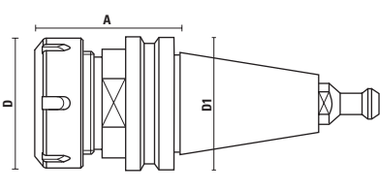
Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.845.R	ISO 30	50	50	58	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.846.R	ISO 30	50	50	58	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.847.R	ISO 30	56	63	58	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.848.R	ISO 30	56	63	58	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

- Retaining pawl T118.793.R for: **Esseteam** (solid flange)

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.861.R	ISO 30	50	50	58	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.862.R	ISO 30	50	50	58	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.864.R	ISO 30	56	63	58	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.866.R	ISO 30	56	63	58	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

COLLET CHUCKS ISO 40

ART. T118

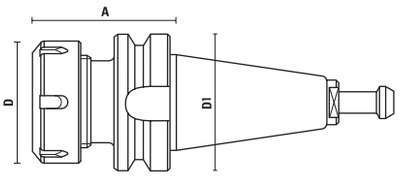


- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.
- Retaining pawl T118.893.R for: **IMA, Weeke, Maka, Reichenbacher, Stegherr**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.850.R	ISO 40	73	50	63,5	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.852.R	ISO 40	73	50	63,5	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.870.R	ISO 40	73	63	63,5	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.872.R	ISO 40	73	63	63,5	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

COLLET CHUCKS BT 30 - BT 35 - BT 40

ART. T118

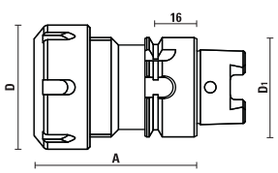


- Supplied with nut (without collet) and retaining pawl
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- Retaining pawl T118.895.R for: BT 30 **Shoda**
- Retaining pawl T118.896.R for: BT 35 **Heian (1)**
- Retaining pawl T118.896.R030 for: BT 35 **Heian (2)**
- Retaining pawl T118.897.R for: BT 40 **Shoda**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.910.R	BT 30	60	50	46	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.912.R	BT 30	70	63	46	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH
T118.920.R	BT 35 (1)	69	50	53	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.921.R	BT 35 (2)	69	50	53	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.922.R	BT 35 (1)	60	63	53	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH
T118.923.R	BT 35 (2)	60	63	53	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH
T118.930.R	BT 40	65	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH

COLLET CHUCKS HSK-40A

ART. T118

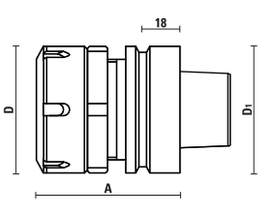


- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip
- For "**Centauro**"

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.950.R	HSK-40A	65	50	40	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH

COLLET CHUCKS HSK-63F

ART. T118

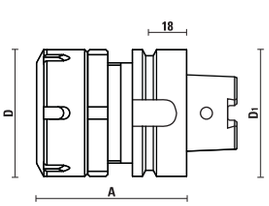


- Supplied with nut (without collet) and return ring nut
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip
- For "**Essetre**"

Item	Taper	A	D	D1	Spring collets	Clamping nut	Return ring nut	Rot.
T118.953.R	HSK-63F	71	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	Z091.902.R	RH

COLLET CHUCKS HSK-63A

ART. T118

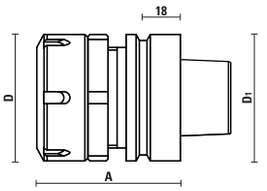


- Supplied with nut (without collet) and return ring nut
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip
- For "**Essetre**"

Item	Taper	A	D	D1	Spring collets	Clamping nut	Return ring nut	Rot.
T118.956.R	HSK-63A	71	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	Z091.902.R	RH

COLLET CHUCKS HSK-63F

ART. T118

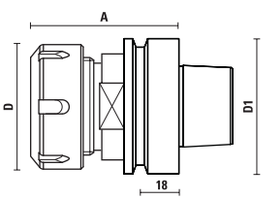


- Supplied with nut (without collet) and return ring nut
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip
- For "**Uniteam**"

Item	Taper	A	D	D1	Spring collets	Clamping nut	Return ring nut	Rot.
T118.959.R	HSK-63F	79	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	Z091.902.R	RH

COLLET CHUCKS HSK TYPE "F"

ART. T118



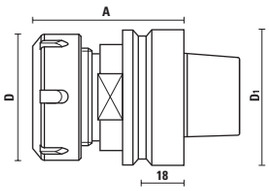
- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25, 7.27
- Threaded nut DIN 6499
- Threaded nut DIN 6388 (EOC25)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499 - DIN 6388/EOC25. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.962.R NEW	HSK-50F	60	42	50	∅ 2÷16 (Art. T125/ER25)	Z091.103.R	RH
T118.966.R	HSK 50 F	73	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.968.R	HSK 50 F	76	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.970.R NEW	HSK-50F	76	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.972.R NEW	HSK-50F	78	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH
T118.974.R	HSK 50 F	78	60	50	∅ 2÷26 (Art. T124/EOC25)	Z091.203.R	RH

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.975.R	HSK 63 F	70	42	63	∅ 3÷16 (Art. T125/ER25)	Z091.103.R	RH
T118.976.R	HSK 63 F	75	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.976.L	HSK 63 F	75	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.L	LH
T118.978.R	HSK 63 F	76	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.980.R	HSK 63 F	75	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.980.L	HSK 63 F	75	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.L	LH
T118.982.R	HSK 63 F	78	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH
T118.983.R	HSK 63 F	78	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.202.R	RH
T118.984.R	HSK 63 F	78	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH
T118.994.R	HSK 63 F	115	60	63	∅ 2÷26 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH

COLLET CHUCKS HSK-63E

ART. T118

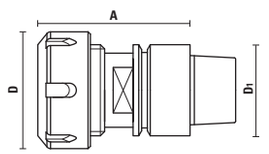


- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25, 7.28
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.985.R	HSK-63E	76	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.985.R100 NEW	HSK-63E	100	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.986.R	HSK-63E	76	50	63	∅ 2÷30 (Art. T134/ETS32)	Z091.301.R	RH
T118.987.R	HSK-63E	76	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.988.R	HSK-63E	76	63	63	∅ 4÷25 (Art. T135/ETS40)	Z091.302.R	RH

COLLET CHUCKS HSK "E"

ART. T118



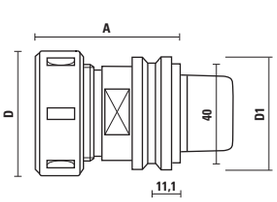
- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25, 7.27, 7.28
- Threaded nut DIN 6499
- **Balanced to 25.000 RPM at G 2,5**
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.990.R *1 NEW	HSK-25E	40	22	25	∅ 2÷10 (Art. T127/ER16)	Z091.405.R Mini	RH
T118.991.R NEW	HSK-32E	60	35	32	∅ 1÷13 (Art. T126/ER20)	Z091.104.R	RH
T118.992.R *1 NEW	HSK-32E	60	42	32	∅ 2÷16 (Art. T125/ER25)	Z091.103.R	RH
T118.993.R *2 NEW	HSK-40E	70	35	40	∅ 2÷16 (Art. T125/ER25)	Z091.403.R Mini	RH
T118.997.R NEW	HSK-50E	80	42	50	∅ 2÷16 (Art. T125/ER25)	Z091.103.R	RH
T118.998.R NEW	HSK-50E	100	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH

* Balanced to 40.000 RPM at G2,5 for "**Multicam**" machines
* Balanced to 34.000 RPM at G2,5

COLLET CHUCKS HSK-50E 40

ART. T118

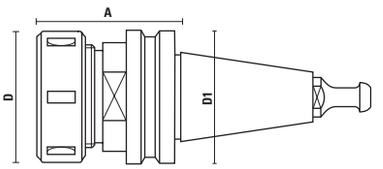


- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.27
- Threaded nut DIN 6388 (EOC25)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN 6388 (EOC25). The "A" measure may be subject to variations depending on the diameter of the clamped tools
- The hollow taper shank is produced according to DIN69893 for inserting the Balluff microchip
- For **ALBERTI "Polar"**

Item	A	D	D1	Spring collets	Clamping nut	Rot.
T118.996.R	75	60	50	∅ 2÷26 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH

COLLET CHUCKS ISO 30 FOR MULTIAX

ART. T118



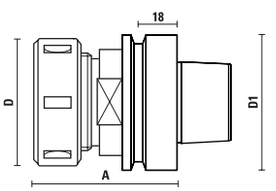
- Supplied with nut (without collet) and retaining pawl
- The "A" measure will be determined with clamped tool shanks by using our spring collet
  The "A" measure may be subject to variations depending on the diameter of the clamped tools
- To be used with our spring collets with 3° taper angle only (see item T133 at page 7.29)
- **Special micro-shot peening treatment**

- Retaining pawl T118.891.R for: **Biesse, Masterwood, Multiax, Vitap**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.841.R NEW	ISO 30	58	50	50	∅ 3÷25,4	Z091.005.R	RH

COLLET CHUCKS HSK-63F FOR MULTIAX

ART. T118



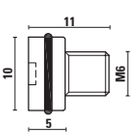
- Supplied with nut (without collet) and retaining pawl
- The "A" measure will be determined with clamped tool shanks by using our spring collet
  The "A" measure may be subject to variations depending on the diameter of the clamped tools
- To be used with our spring collets with 3° taper angle only (see item T133 at page 7.29)
- **Special micro-shot peening treatment**

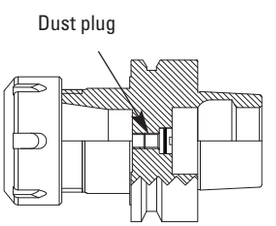
For: **Multiax**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.941.R NEW	HSK 63F	58	50	63	∅ 3÷25,4	Z091.005.R	RH
T118.941.L NEW	HSK-63F	58	50	63	∅ 3÷25,4	Z091.005.R	LH

DUST PLUG

ART. Z051



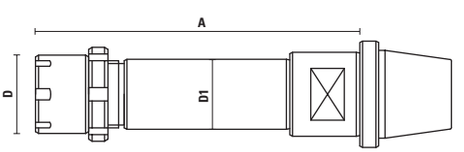


- To be used with our HSK toolholders to avoid any contamination of dust into the electrospindle.
- Inexpensive and easy to use.

Item	Description
Z051.070.N NEW	M6x6

COLLET CHUCKS DIN 6499 (ER32)

ART. T118



- Supplied with ER20 Mini nut and return ring nut (without spring collet)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN 6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools

For: **Bacci/Greda**

Item	A	D	D1	Spring collets	Clamping nut	Return ring nut	Rot.
T118.935.R NEW	85	28	25	∅ 2÷13 (Art. T126/ER20)	Z091.404.R (ER20 Mini)	Z091.904.R	RH

COLLET CHUCKS HSK63F HIGH SPEED LOW NOISE KleinOVERLINE

The increasing use of 5-axis machines has enabled to step up the possible workings and with it the need to perform operations in tight and hard to reach spaces.
In order to meet these needs with the utmost precision and excellent finishes we offer a range of special HSK63F tool holders for collets **ER16**, **ER32** and **DIN6388/EOC25**, balanced at grade **G 2.5 at 36,000 RPM**.

Main features KleinOVERLINE

- √ - **Accessibility**
- √ - **Balance**
- √ - **Rotation speed**
- √ - **Noiselessness**
- √ - **Extended length tool holders, reaching 200 mm.**
- √ - **G 2.5 balancing grade**
- √ - **36.000 RPM**
- √ - **No-noise nuts, with ground contours**

These nuts should be tightened with a torque wrench (our item Z052 see page 10.08) on a proper demount device (our item T139 see page 7.41), as shown in the pictures.
The toolholders are supplied with a special design nut, with no lengthwise cuts, suitable for machining at high speed.
A remarkable noise decrease is also achieved.

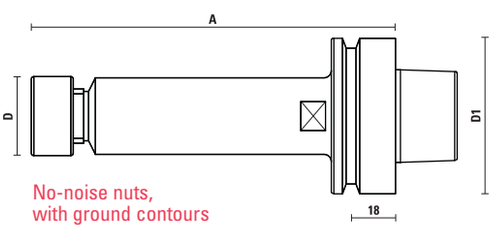
Adjustable demount devices Art. T139 page 7.41

Insert the collet chuck in the demount devices

Tighten the nut using the torque wrench Art Z052 page 10.08

COLLET CHUCKS HSK-63F ER16 - G2.5 BALANCING

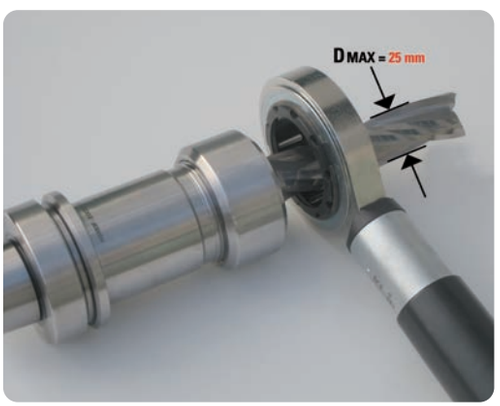
ART. TK118

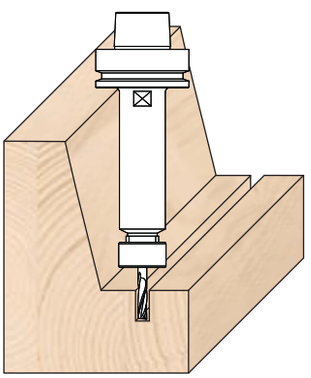


- **Balanced at grade G 2.5 to 36.000 RPM**
- **Noise and vibrations reduction**
- Supplied with nut (without collet)
- Threaded nut and wrenches see page 7.31, spring collets see page 7.28
- Threaded nut DIN 6499
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.

On request can be supplied the standard clamping nuts (Items Z091 see pages 7.32, 10.13)

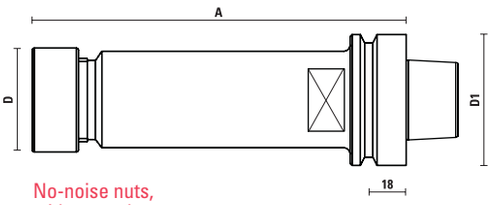
Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
TK118.900.R150	HSK-63F	150	32	63	∅ 2÷10 (Art. T127/ER16)	Z091.505.R	RH





COLLET CHUCKS HSK-63F ER32 - G2.5 BALANCING

ART. TK118



No-noise nuts,
with ground contours

- **Balanced at grade G 2.5 to 36.000 RPM**
- **Noise and vibrations reduction**
- Supplied with nut (without collet)

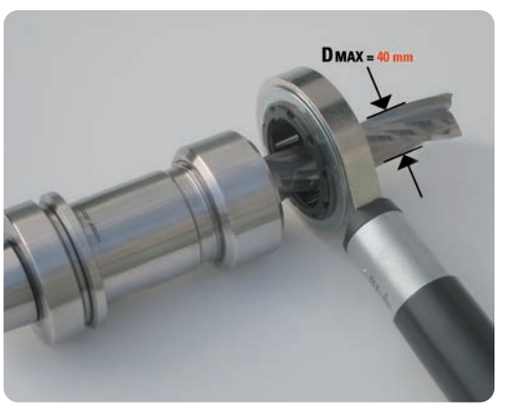
- Threaded nut and wrenches see page 7.31, spring collets see page 7.25

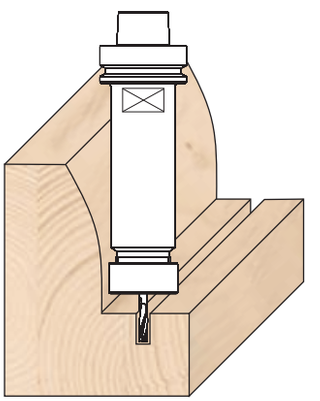
- Threaded nut DIN 6499

- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.

On request can be supplied the standard clamping nuts (Items Z091 see pages 7.32, 10.13)

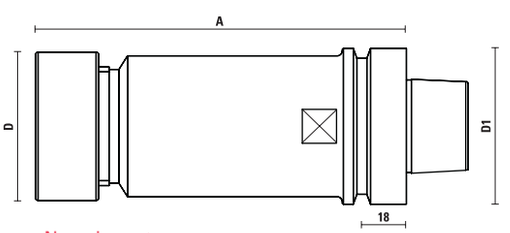
Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
TK118.976.R075	HSK-63F	75	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.501.R	RH
TK118.976.R125	HSK-63F	125	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.501.R	RH
TK118.976.R180	HSK-63F	180	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.501.R	RH





COLLET CHUCKS HSK-63F DIN6388/EOC25 - G2.5 BALANCING

ART. TK118



No-noise nuts,
with ground contours

- **Balanced at grade G 2.5 to 36.000 RPM**
- **Noise and vibrations reduction**
- Supplied with nut (without collet)

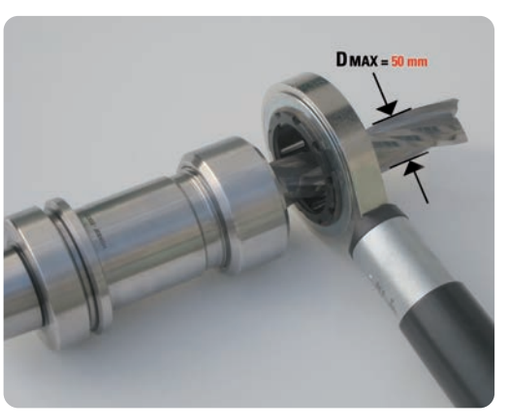
- Threaded nut and wrenches see page 7.31, spring collets see page 7.27

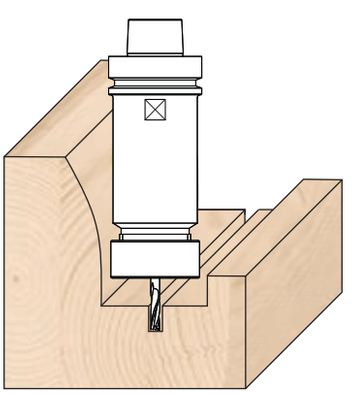
- Threaded nut DIN 6388 (EOC25)

- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499. The "A" measure may be subject to variations depending on the diameter of the clamped tools.

On request can be supplied the standard clamping nuts (Items Z091 see pages 7.32, 10.13)

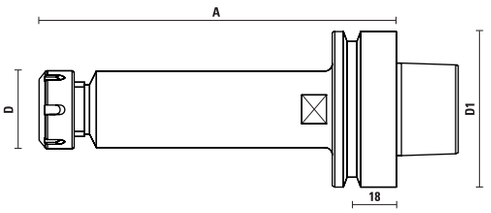
Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
TK118.984.R078	HSK-63F	78	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.522.R	RH
TK118.984.R115	HSK-63F	115	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.522.R	RH
TK118.984.R150	HSK-63F	150	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.522.R	RH
TK118.984.R200	HSK-63F	200	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.522.R	RH





COLLET CHUCKS HSK-63F ER16 - G2.5 BALANCING

ART. TJ118

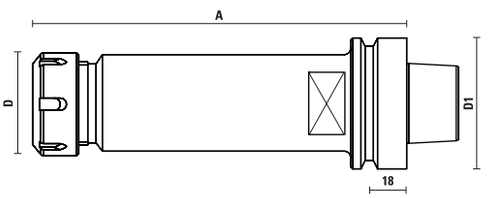


- **Balanced at G2.5**
- Maximum speed rotation at **36.000 RPM**
- Supplied with standard clamping nut
- Threaded nut and wrenches (see page 7.31)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499.
  The "A" measure may be subject to variations depending on the diameter of the clamped tools.

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
TJ118.900.R150 NEW	HSK-63F	150	32	63	∅ 2÷10 (Art. T127/ER16)	Z091.105.R	RH

COLLET CHUCKS HSK-63F ER32 - G2.5 BALANCING

ART. TJ118

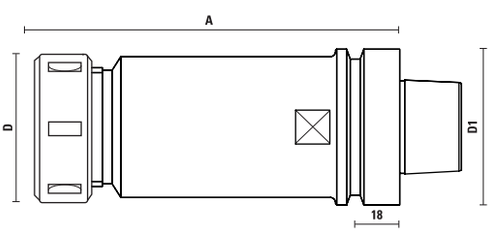


- **Balanced at G2.5**
- Maximum speed rotation at **36.000 RPM**
- Supplied with standard clamping nut
- Threaded nut and wrenches (see page 7.31)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499.
  The "A" measure may be subject to variations depending on the diameter of the clamped tools.

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
TJ118.976.R075 NEW	HSK-63F	75	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
TJ118.976.R125 NEW	HSK-63F	125	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
TJ118.976.R180 NEW	HSK-63F	180	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH

COLLET CHUCKS HSK-63F DIN6388/EOC25 - G2.5 BALANCING

ART. TJ118



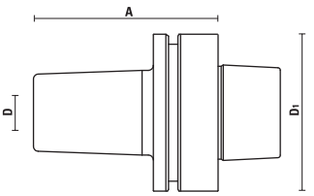
- **Balanced at G2.5**
- Maximum speed rotation at **36.000 RPM**
- Supplied with standard clamping nut
- Threaded nut and wrenches (see page 7.31)
- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499.
  The "A" measure may be subject to variations depending on the diameter of the clamped tools.

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
TJ118.984.R078 NEW	HSK-63F	78	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.202.R	RH
TJ118.984.R115 NEW	HSK-63F	115	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.202.R	RH
TJ118.984.R150 NEW	HSK-63F	150	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.202.R	RH
TJ118.984.R200 NEW	HSK-63F	200	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.202.R	RH

SHRINK FIT CHUCKS HSK-63F

ART. T120

HotBlock®



- **Concentricity ≤ 0,003 mm**
- **High precision** tool holders guaranteed by thermally induced shrink fit
- High rigidity and balance for heavy CNC working
- For HS and HW cutting tool
- **Balanced to 24.000 RPM at G 2,5**
- **Right and left-hand rotation**
- Cutting tool shank must have tolerance h6 with cylindrical shank (no flats)

Item	Taper	A	D1	D	Rot.
T120.580.N NEW	HSK-63F	76	63	8	RH/LH
T120.600.N NEW	HSK-63F	76	63	10	RH/LH
T120.620.N NEW	HSK-63F	76	63	12	RH/LH
T120.627.N NEW	HSK-63F	76	63	1/2" - (12,7 mm)	RH/LH
T120.660.N NEW	HSK-63F	76	63	16	RH/LH
T120.695.N NEW	HSK-63F	76	63	3/4" - (19,05 mm)	RH/LH
T120.700.N NEW	HSK-63F	76	63	20	RH/LH
T120.750.N NEW	HSK-63F	76	63	25	RH/LH

HotBlock®*: high precision tool holders which ensure more precision having less coupling thanks to its special tight on the shank tool by thermal clamping. First, the collet tip is heated with the special shrink fit unit (see our article K.START.2), causing it to expand. The cutter shank is then inserted, and the collet is cooled to ambient temperature with the cooling machine (see our article K.FG500). This causes the collet to contract precisely around the cutter shank with a special concentricity less than 3 micron, therefore the highest precision and stability for high performance.

SHRINK FIT UNIT

ART. K.START.2

- **Heating time from 2 to 7 seconds**
- Provided with inductor stop rings (6 to 12) + (14 to 20) and chuck holder for HSK63F
- Heating located on the tool holder, no deterioration of the tool and tool holder
- **Self-regulated power** thanks to a microprocessor depending on parameters detected
- **Inductor rotates 180°** without disassembling
- Power supply 3x380/480V – 16A 50/60 Hz -14 kW
- Dimensions: L= 255 mm - D= 490 mm - H= 755 mm
- Weight (options excluded) 20 kgs

See this product at Section 16, page 16.18.

Item
K.START.2 NEW

COOLING UNIT WITH AIR FLOW

ART. K.FG500

- Air cooling unit for shrink fit chucks
- **Cooling time from 1,30 minute to 3 minutes**
- Provided with cooling stop rings (6 to 12) + (14 to 20) and chuck holder for HSK63F
- Compressed air supply: 4-6 bars
- Dimensions: L= 220 mm - D= 190 mm - H= 615 mm
- Weight: 5 kgs

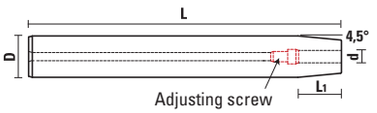
See this product at Section 16, page 16.18.

Item
K.FG500 NEW

NB: This items cannot be sold in Germany/France/USA due to commercial agreements between the producer (Elco) and their autorised dealers in these markets.

SHRINK FIT CHUCK EXTENSIONS L=150

ART. T120

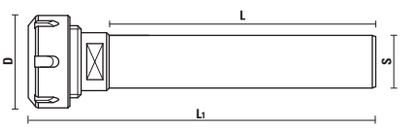


- Suitable for **working deep and hard to reach surfaces**
- To be used with heat shrink fit chucks (our item T120) or hydro chuck
- Best results when clamping HW or HS tools with h6 tool shank
- **With adjusting screw for length adjustment**

Item	D	d	L	L1	Screw
T120.012.03 NEW	12	3	150	12	M5
T120.012.04 NEW	12	4	150	16	M5
T120.016.04 NEW	16	4	150	16	M5
T120.016.06 NEW	16	6	150	26	M5
T120.020.06 NEW	20	6	150	26	M5
T120.020.08 NEW	20	8	150	26	M6
T120.020.10 NEW	20	10	150	32	M6
T120.020.12 NEW	20	12	150	37	M10
T120.025.08 NEW	25	8	150	26	M6
T120.025.10 NEW	25	10	150	32	M6
T120.025.12 NEW	25	12	150	37	M10
T120.025.16 NEW	25	16	150	40	M10

STRAIGHT SHANK TOOL EXTENSION

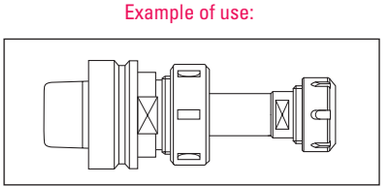
ART. T121



- To be used on ER tool holders
- Suitable **for working deep and hard to reach surfaces**

Item	D	Spring collets	Clamping nut	S	L	L1	Rot.
T121.016.120.080 NEW	22	∅ 2÷10 (Art. T127/ER16)	Z091.405.R Mini	12	80	118	RH
T121.016.160.100 NEW	22	∅ 2÷10 (Art. T127/ER16)	Z091.405.R Mini	16	100	138	RH
T121.016.200.100 NEW	22	∅ 2÷10 (Art. T127/ER16)	Z091.405.R Mini	20	100	131	RH
T121.016.200.160 NEW	22	∅ 2÷10 (Art. T127/ER16)	Z091.405.R Mini	20	160	191	RH
T121.016.200.200 NEW	22	∅ 2÷10 (Art. T127/ER16)	Z091.405.R Mini	20	200	231	RH
T121.020.160.100 NEW	28	∅ 2÷13 (Art. T126/ER20)	Z091.404.R Mini	16	100	142	RH
T121.020.160.160 NEW	28	∅ 2÷13 (Art. T126/ER20)	Z091.404.R Mini	16	160	202	RH
T121.020.200.100 NEW	28	∅ 2÷13 (Art. T126/ER20)	Z091.404.R Mini	20	100	137	RH
T121.020.200.160 NEW	28	∅ 2÷13 (Art. T126/ER20)	Z091.404.R Mini	20	160	197	RH
T121.020.250.160 NEW	28	∅ 2÷13 (Art. T126/ER20)	Z091.404.R Mini	25	160	188	RH
T121.020.250.240 NEW	28	∅ 2÷13 (Art. T126/ER20)	Z091.404.R Mini	25	240	282	RH
T121.025.200.060 NEW	35	∅ 3÷16 (Art. T125/ER25)	Z091.403.R Mini	20	60	106	RH
T121.025.200.100 NEW	35	∅ 3÷16 (Art. T125/ER25)	Z091.403.R Mini	20	100	146	RH
T121.025.200.160 NEW	35	∅ 3÷16 (Art. T125/ER25)	Z091.403.R Mini	20	160	206	RH
T121.025.250.100 NEW	42	∅ 3÷16 (Art. T125/ER25)	Z091.103.R	25	100	140	RH
T121.025.250.160 NEW	42	∅ 3÷16 (Art. T125/ER25)	Z091.103.R	25	160	200	RH

Example of use:



- For a proper use and maximum holding power, fill the collet all the way with the extension shank;
- It is very important to tighten the collet nut of tool holder to recommended torque using a torque wrench;
- When the extension is mounted, balancing grade is not guaranteed.

STAINLESS STEEL COLLET CHUCKS

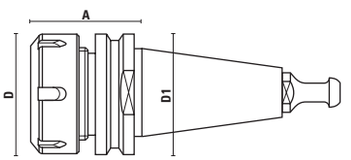
Useful information:

- Solid stainless steel collet chucks are **more resistant** and have **a longer life span**;
- A special surface treatment guarantees an **excellent resistance to corrosion** and an **aesthetic pleasing**;
- **No problems of peeling** compared to coated chucks.
- **Better working performances** and longer life of the electrospindles.

COLLET CHUCKS ISO 30 INOX

ART. T118

- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499.
  The "A" measure may be subject to variations depending on the diameter of the clamped tools.



- **Produced in stainless steel AISI 420**
- Supplied with nut (without collet) and retaining pawl;
- Needed when working with coolant: machines for marble, glass, aluminium working and others;
- Highly recommended when processing resinoid wood and composite materials;
- Suggested when working in **"humid" environment;**
- Extremely **low maintenance costs**, easy to clean;
- When used with coolant our water-tight spring collets are suggested (see page 7.26)

Retaining pawl T118.891.R For: **Biesse** (after 09/09/92)**, Masterwood - Bulleri** (motor H.S.D.), **Vitap**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.800.RAI	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.802.RAI	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.830.RAI	ISO 30	55	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.832.RAI	ISO 30	55	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

Retaining pawl T118.792.R For: **Alberti, Vitap, Masterwood** (motor G. Colombo)

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.811.RAI	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.813.RAI	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.815.RAI	ISO 30	55	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.817.RAI	ISO 30	55	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

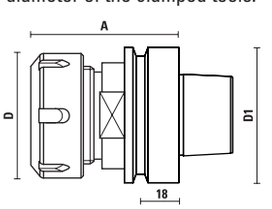
Retaining pawl T118.791.R (DIN 69872) For: **Anderson, Busellato, Weeke, Ima, Bulleri, Maka, Cosmec, Reichenbacher, Elte**

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.821.RAI	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.823.RAI	ISO 30	50	50	50	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.825.RAI	ISO 30	55	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.827.RAI	ISO 30	55	63	50	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH

COLLET CHUCKS HSK-63F INOX

ART. T118

- The "A" measure will be determined with clamped tool shanks by using our spring collet DIN6499.
  The "A" measure may be subject to variations depending on the diameter of the clamped tools.

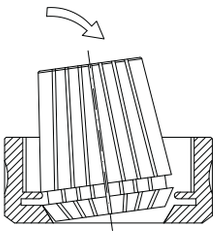


- **Produced in stainless steel AISI 420**
- Supplied with nut (without collet) and retaining pawl;
- Needed when working with coolant: machines for marble, glass, aluminium working and others;
- Highly recommended when processing resinoid wood and composite materials;
- Suggested when working in **"humid" environment;**
- Extremely **low maintenance costs**, easy to clean;
- When used with coolant our water-tight spring collets are suggested (see page 7.26)

Item	Taper	A	D	D1	Spring collets	Clamping nut	Rot.
T118.976.RAI	HSK-63F	74	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.001.R	RH
T118.978.RAI	HSK-63F	74	50	63	∅ 2÷20 (Art. T119/ER32)	Z091.101.R ball bearing nut	RH/LH
T118.980.RAI	HSK-63F	77	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.002.R	RH
T118.982.RAI	HSK-63F	77	63	63	∅ 2÷30 (Art. T123/ER40)	Z091.102.R ball bearing nut	RH/LH
T118.983.RAI	HSK-63F	78	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.202.R	RH
T118.984.RAI	HSK-63F	78	60	63	∅ 3÷26 (Art. T124/EOC25)	Z091.203.R ball bearing nut	RH/LH

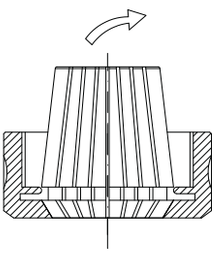
SPRING COLLETS

HOW TO INSERT THE SPRING COLLET IN THE NUT



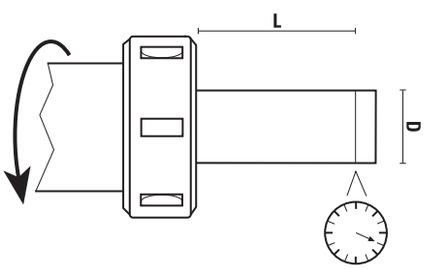
Right procedure to assemble the collet in the nut:
- place the collet diagonal to the clamping nut and lock it from the side by pressing it from top
- screw the nut and be sure the shank is correctly inserted in the spring collet.

Tighten the nut using the apposite key on the proper demount device (Art. T139, see page 7.41)
Do not place the spring collet in the collet chuck before you have it properly inserted in the nut.



Correct procedure for tool and spring collet change:
- place the collet chuck in the mounting device
- untighten the clamping nut
- open the clamping nut and pull the cutting tool out holding it on the shank
- release the collet from the clamping nut by lateral pressure

Klein OFFERS ONLY HIGH PRECISION SPRING COLLETS:



D	L	Standard Precision	High Precision Klein
∅3 - ∅4 - ∅5	16	0,015	> 0,010
∅6 ÷ ∅9,5	25	0,015	> 0,010
∅10 ÷ ∅17	40	0,020	> 0,010
∅18 ÷ ∅26	50	0,020	> 0,010

Using high precision spring collets, vibrations on the tools and motors are reduced, assuring better results and a longer life of the tools and electrospindles.

COLLET LIFE SPAN:

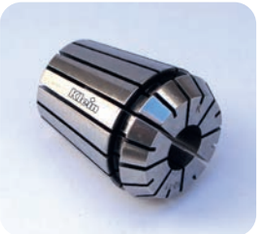
Spring collets have a life span of approximately 3 months if used 8 hours a day.
Replacing the collets will ensure your operation runs consistency and prevents from tool breakage.

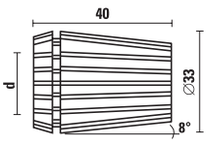
MAINTENANCE:

Keeping spring collets and tools clean is essential for a longer life.
The worked material produces chips and dirt which can cause an elliptical tool rotation.
The seats of collet chucks and electrospindles should be cleaned daily with the correct tapers
(see our items **T137** and **X137** at the page 7.40)

SPRING COLLETS ER 32 - DIN 6499

ART. T119





Precision= 0,01

Item	d
T119.020.N	∅ 2 - 1
T119.030.N	∅ 3 - 2
T119.032.N	∅ 3,2 (1/8")
T119.040.N	∅ 4 - 3
T119.048.N	∅ 4,8 (3/16")
T119.050.N	∅ 5 - 4
T119.060.N	∅ 6 - 5
T119.064.N	∅ 6,4 (1/4")
T119.070.N	∅ 7 - 6
T119.079.N	∅ 7,9 (5/16")
T119.080.N	∅ 8 - 7
T119.090.N	∅ 9 - 8
T119.095.N	∅ 9,5 (3/8")
T119.100.N	∅ 10 - 9
T119.110.N	∅ 11 - 10
T119.120.N	∅ 12 - 11
T119.127.N	∅ 12,7 (1/2")
T119.130.N	∅ 13 - 12
T119.140.N	∅ 14 - 13
T119.150.N	∅ 15 - 14
T119.159.N	∅ 15,9 (5/8")
T119.160.N	∅ 16 - 15
T119.170.N	∅ 17 - 16
T119.180.N	∅ 18 - 17
T119.190.N	∅ 19 - 18
T119.191.N	∅ 19,1 (3/4")
T119.200.N	∅ 20 - 19

SPRING COLLET SET ER 32 - DIN 6499

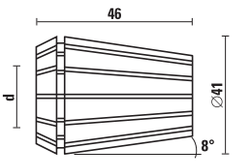
ART. X119

- Complete with 18 pcs
- In carton Box

Item	
X119.118.N	Diameters:
	∅3 - ∅4 - ∅5 - ∅6 - ∅7 - ∅8
	∅9 - ∅10 - ∅11 - ∅12 - ∅13 - ∅14
	∅15 - ∅16 - ∅17 - ∅18 - ∅19 - ∅20

SPRING COLLETS ER 40 - DIN 6499

ART. T123



Precision= 0,01

Item	d
T123.030.N	∅ 3 - 2
T123.032.N	∅ 3,2 (1/8")
T123.040.N	∅ 4 - 3
T123.048.N	∅ 4,8 (3/16")
T123.050.N	∅ 5 - 4
T123.060.N	∅ 6 - 5
T123.064.N	∅ 6,4 (1/4")
T123.070.N	∅ 7 - 6
T123.079.N	∅ 7,9 (5/16")
T123.080.N	∅ 8 - 7
T123.090.N	∅ 9 - 8
T123.095.N	∅ 9,5 (3/8")
T123.100.N	∅ 10 - 9
T123.110.N	∅ 11 - 10
T123.120.N	∅ 12 - 11
T123.127.N	∅ 12,7 (1/2")
T123.130.N	∅ 13 - 12
T123.140.N	∅ 14 - 13
T123.150.N	∅ 15 - 14
T123.159.N	∅ 15,9 (5/8")
T123.160.N	∅ 16 - 15
T123.170.N	∅ 17 - 16
T123.180.N	∅ 18 - 17
T123.190.N	∅ 19 - 18
T123.191.N	∅ 19,1 (3/4")
T123.200.N	∅ 20 - 19
T123.210.N	∅ 21 - 20
T123.220.N	∅ 22 - 21
T123.230.N	∅ 23 - 22
T123.240.N	∅ 24 - 23
T123.250.N	∅ 25 - 24
T123.254.N	∅ 25,4 (1")
T123.260.N	∅ 26 - 25
T123.300.N	∅ 30 - 29

SPRING COLLET SET ER 40 - DIN 6499

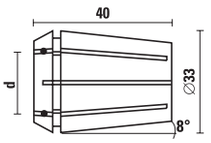
ART. X123

- Complete with 23 pcs
- In carton Box

Item	
X123.023.N	Diameters:
	∅3 - ∅4 - ∅5 - ∅6 - ∅7 - ∅8
	∅9 - ∅10 - ∅11 - ∅12 - ∅13 - ∅14
	∅15 - ∅16 - ∅17 - ∅18 - ∅19 - ∅20
	∅21 - ∅22 - ∅23 - ∅24 - ∅25

WATER-TIGHT SPRING COLLETS ER 32 - DIN 6499

ART. T119



- **Precision= 0,01**
- **Highly recommended when working with lubricant**
- Indicated for working aluminium, marble, glass and others
- To be used only with our clamping nuts with eccentric ring (item Z091.051.R)

Item	d
T119.020.NTS	∅ 2 - 1
T119.030.NTS	∅ 3 - 2
T119.040.NTS	∅ 4 - 3
T119.050.NTS	∅ 5 - 4
T119.060.NTS	∅ 6 - 5
T119.070.NTS	∅ 7 - 6
T119.080.NTS	∅ 8 - 7
T119.090.NTS	∅ 9 - 8
T119.100.NTS	∅ 10 - 9
T119.110.NTS	∅ 11 - 10
T119.120.NTS	∅ 12 - 11
T119.130.NTS	∅ 13 - 12
T119.140.NTS	∅ 14 - 13
T119.150.NTS	∅ 15 - 14
T119.160.NTS	∅ 16 - 15
T119.170.NTS	∅ 17 - 16
T119.180.NTS	∅ 18 - 17
T119.190.NTS	∅ 19 - 18
T119.200.NTS	∅ 20 - 19

WATER-TIGHT SPRING COLLET SET ER 32 - DIN 6499

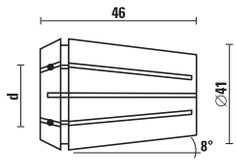
ART. X119

- Complete with 18 pcs
- In carton Box

Item	
X119.118.NTS	Diameters:
	∅3 - ∅4 - ∅5 - ∅6 - ∅7 - ∅8
	∅9 - ∅10 - ∅11 - ∅12 - ∅13 - ∅14
	∅15 - ∅16 - ∅17 - ∅18 - ∅19 - ∅20

WATER-TIGHT SPRING COLLETS ER 40 - DIN 6499

ART. T123



- **Precision= 0,01**
- **Highly recommended when working with lubricant**
- Indicated for working aluminium, marble, glass and others
- To be used only with our clamping nuts with eccentric ring (item Z091.051.R)

Item	d
T123.030.NTS	∅ 3 - 2
T123.032.NTS	∅ 3,2 (1/8")
T123.040.NTS	∅ 4 - 3
T123.050.NTS	∅ 5 - 4
T123.060.NTS	∅ 6 - 5
T123.070.NTS	∅ 7 - 6
T123.080.NTS	∅ 8 - 7
T123.090.NTS	∅ 9 - 8
T123.100.NTS	∅ 10 - 9
T123.110.NTS	∅ 11 - 10
T123.120.NTS	∅ 12 - 11
T123.130.NTS	∅ 13 - 12
T123.140.NTS	∅ 14 - 13
T123.150.NTS	∅ 15 - 14
T123.160.NTS	∅ 16 - 15
T123.170.NTS	∅ 17 - 16
T123.180.NTS	∅ 18 - 17
T123.190.NTS	∅ 19 - 18
T123.200.NTS	∅ 20 - 19
T123.210.NTS	∅ 21 - 20
T123.220.NTS	∅ 22 - 21
T123.230.NTS	∅ 23 - 22
T123.240.NTS	∅ 24 - 23
T123.250.NTS	∅ 25 - 24
T123.260.NTS	∅ 26 - 25

WATER-TIGHT SPRING COLLET SET ER 40 - DIN 6499

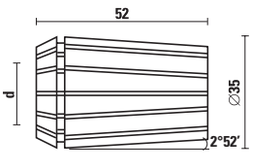
ART. X123

- Complete with 23 pcs
- In carton Box

Item	
X123.023.NTS	Diameters:
	∅3 - ∅4 - ∅5 - ∅6 - ∅7 - ∅8
	∅9 - ∅10 - ∅11 - ∅12 - ∅13 - ∅14
	∅15 - ∅16 - ∅17 - ∅18 - ∅19 - ∅20
	∅21 - ∅22 - ∅23 - ∅24 - ∅25

SPRING COLLETS EOC25 - DIN 6388 (462 E)

ART. T124

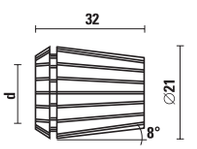


Precision= 0,01

Item	d
T124.020.N	∅ 2 - 1,5
T124.030.N	∅ 3 - 2,5
T124.032.N NEW	∅ 3,2 (1/8")
T124.040.N	∅ 4 - 3,5
T124.048.N NEW	∅ 4,8 (3/16")
T124.050.N	∅ 5 - 4,5
T124.060.N	∅ 6 - 5,5
T124.064.N	∅ 6,4 (1/4")
T124.070.N	∅ 7 - 6,5
T124.079.N	∅ 7,9 (5/16")
T124.080.N	∅ 8 - 7,5
T124.095.N	∅ 9,5 (3/8")
T124.100.N	∅ 10 - 9,5
T124.110.N	∅ 11 - 10,5
T124.120.N	∅ 12 - 11,5
T124.127.N	∅ 12,7 (1/2")
T124.130.N	∅ 13 - 12,5
T124.140.N	∅ 14 - 13,5
T124.159.N	∅ 15,9 (5/8")
T124.160.N	∅ 16 - 15,5
T124.180.N	∅ 18 - 17,5
T124.190.N	∅ 19 - 18,5
T124.191.N	∅ 19,1 (3/4")
T124.200.N	∅ 20 - 19,5
T124.220.N	∅ 22 - 21,5
T124.250.N	∅ 25 - 24,5
T124.254.N	∅ 25,4 (1")

SPRING COLLETS ER 20 - DIN 6499

ART. T126

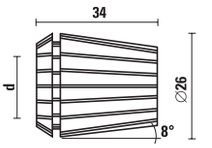


Precision= 0,01

Item	d
T126.016.N	∅ 1,59 (1/16")
T126.030.N	∅ 3 - 2
T126.032.N	∅ 3,2 (1/8")
T126.040.N	∅ 4 - 3
T126.050.N	∅ 5 - 4
T126.060.N	∅ 6 - 5
T126.064.N	∅ 6,4 (1/4")
T126.070.N	∅ 7 - 6
T126.080.N	∅ 8 - 7
T126.090.N	∅ 9 - 8
T126.095.N	∅ 9,5 (3/8")
T126.100.N	∅ 10 - 9
T126.110.N	∅ 11 - 10
T126.120.N	∅ 12 - 11
T126.127.N	∅ 12,7 (1/2")
T126.130.N	∅ 13 - 12

SPRING COLLETS ER 25 - DIN 6499

ART. T125



Precision= 0,01

Item	d
T125.016.N	∅ 1,59 (1/16")
T125.020.N	∅ 2 - 1
T125.030.N	∅ 3 - 2
T125.032.N	∅ 3,2 (1/8")
T125.040.N	∅ 4 - 3
T125.048.N	∅ 4,8 (3/16")
T125.050.N	∅ 5 - 4
T125.060.N	∅ 6 - 5
T125.064.N	∅ 6,4 (1/4")
T125.070.N	∅ 7 - 6
T125.079.N	∅ 7,9 (5/16")
T125.080.N	∅ 8 - 7
T125.090.N	∅ 9 - 8
T125.095.N	∅ 9,5 (3/8")
T125.100.N	∅ 10 - 9
T125.110.N	∅ 11 - 10
T125.120.N	∅ 12 - 11
T125.127.N	∅ 12,7 (1/2")
T125.130.N	∅ 13 - 12
T125.140.N	∅ 14 - 13
T125.150.N	∅ 15 - 14
T125.159.N	∅ 15,9 (5/8")
T125.160.N	∅ 16 - 15

SPRING COLLET SET ER25 - DIN 6499

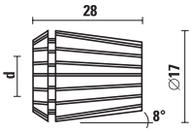
ART. X125

- Complete with 14 pcs
- In wooden Box

Item	
X125.014.N	Diameters:
	∅3 - ∅4 - ∅5 - ∅6 - ∅7 - ∅8 - ∅9
	∅10 - ∅11 - ∅12 - ∅13 - ∅14 - ∅15 - ∅16

SPRING COLLETS ER 16 - DIN 6499

ART. T127

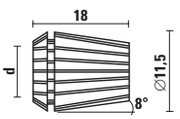


Precision= 0,01

Item	d
T127.016.N	∅ 1,59 (1/16")
T127.020.N	∅ 2 - 1
T127.030.N	∅ 3 - 2
T127.032.N	∅ 3,2 (1/8")
T127.040.N	∅ 4 - 3
T127.050.N	∅ 5 - 4
T127.060.N	∅ 6 - 5
T127.064.N	∅ 6,4 (1/4")
T127.070.N	∅ 7 - 6
T127.080.N	∅ 8 - 7
T127.090.N	∅ 9 - 8
T127.095.N	∅ 9,5 (3/8")
T127.100.N	∅ 10 - 9

SPRING COLLETS ER 11 - DIN 6499

ART. T129

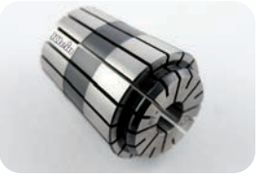


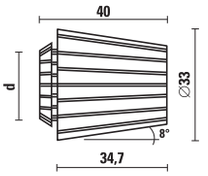
Precision= 0,01

Articolo/*Item*	d
T129.010.N	∅ 1-0,5
T129.015.N	∅ 1,5-1
T129.020.N	∅ 2-1,5
T129.025.N	∅ 2,5-2
T129.030.N	∅ 3-2,5
T129.032.N	∅ 3,2 (1/8")
T129.035.N	∅ 3,5-3
T129.040.N	∅ 4-3,5
T129.045.N	∅ 4,5-4
T129.048.N	∅ 4,8 (3/16")
T129.050.N	∅ 5-4,5
T129.055.N	∅ 5,5-5
T129.060.N	∅ 6-5,5
T129.064.N	∅ 6,4 (1/4")
T129.065.N	∅ 6,5-6
T129.070.N	∅ 7-6,5

SPRING COLLETS ETS 32 - DIN 6499

ART. T134



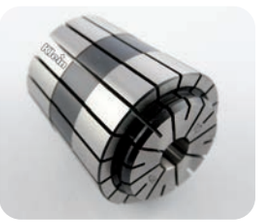


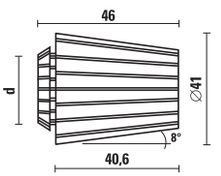
Precision= 0,01

Item	d
T134.030.N	∅ 3 - 2
T134.040.N	∅ 4 - 3
T134.050.N	∅ 5 - 4
T134.060.N	∅ 6 - 5
T134.070.N	∅ 7 - 6
T134.080.N	∅ 8 - 7
T134.100.N	∅ 10 - 9
T134.120.N	∅ 12 - 11
T134.130.N	∅ 13 - 12
T134.140.N	∅ 14 - 13
T134.160.N	∅ 16 - 15
T134.180.N	∅ 18 - 17
T134.200.N	∅ 20 - 19

SPRING COLLETS ETS 40 - DIN 6499

ART. T135



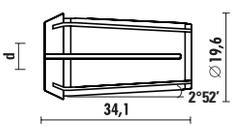


Precision= 0,01

Item	d
T135.040.N	∅ 4 - 3
T135.050.N	∅ 5 - 4
T135.060.N	∅ 6 - 5
T135.070.N	∅ 7 - 6
T135.080.N	∅ 8 - 7
T135.100.N	∅ 10 - 9
T135.120.N	∅ 12 - 11
T135.130.N	∅ 13 - 12
T135.140.N	∅ 14 - 13
T135.160.N	∅ 16 - 15
T135.180.N	∅ 18 - 17
T135.200.N	∅ 20 - 19
T135.250.N	∅ 25 - 24

SPRING COLLETS EOC12 - DIN 6388 (407E)

ART. T136

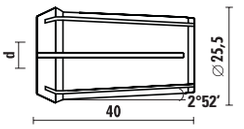


- To be used with Art. T118.580.R
- **Precision= 0,01**

Item	d
T136.040.N	∅ 4 - 3
T136.060.N	∅ 6 - 5
T136.064.N	∅ 6,4 (1/4")
T136.080.N	∅ 8 - 7
T136.095.N	∅ 9,5 (3/8")
T136.100.N	∅ 10 - 9
T136.120.N	∅ 12 - 11
T136.127.N	∅ 12,7 (1/2")

SPRING COLLETS EOC16 - DIN 6388 (415E)

ART. T138

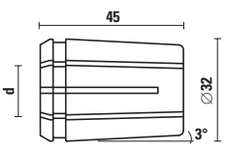


- Precision= 0,01

Item	d
T138.040.N	∅ 4 - 3
T138.060.N	∅ 6 - 5
T138.064.N	∅ 6,4 (1/4")
T138.080.N	∅ 8 - 7
T138.095.N	∅ 9,5 (3/8")
T138.100.N	∅ 10 - 9
T138.120.N	∅ 12 - 11
T138.127.N	∅ 12,7 (1/2")

SPRING COLLETS 3° TAPER ANGLE

ART. T133



To be used with our tool holders (see item T118.941.R and T118.841.R) for Multiax router machines only.

Precision= 0,01

Item	d
T133.032.N NEW	∅ 3,2 (1/8")
T133.040.N NEW	∅ 4 - 3
T133.060.N NEW	∅ 6 - 5
T133.064.N NEW	∅ 6,4 (1/4")
T133.079.N NEW	∅ 7,9 (5/16")
T133.080.N NEW	∅ 8 - 7
T133.095.N NEW	∅ 9,5 (3/8")
T133.100.N NEW	∅ 10 - 9
T133.120.N NEW	∅ 12 - 11
T133.127.N NEW	∅ 12,7 (1/2")
T133.159.N NEW	∅ 15,9 (5/8")
T133.160.N NEW	∅ 16 - 15
T133.191.N NEW	∅ 19,1 (3/4")
T133.200.N NEW	∅ 20 - 19
T133.250.N NEW	∅ 25 - 24
T133.254.N NEW	∅ 25,4 (1")

SPRING COLLET SET + WIPE OFF KIT

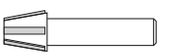
The **wipe off set** allows maintaining the inside as well as the seat of the spring collet on the chuck clean, helps increasing cutting efficiency and reduce vibrations for a longer tool life. No more risk of wrong positioning of both the collet and the tool due to chips and resin.

- In plastic box

Set complete with:
- nr. 10 spring collets
- Collet wipers
- Brushes for collet bore

Item
X125.515.N

Set complete with **10 spring collets ER25**:
∅3 - ∅4 - ∅5 - ∅6 - ∅7 ∅8 - ∅10 - ∅12 - ∅14 - ∅16



T137.525.N - Collet wiper ER25

X137.004.N - nr. 4 brushes for collet bore ER25

Item
X119.515.N

Set complete with **10 spring collets ER32**:
∅4 - ∅5 - ∅6 - ∅8 - ∅10 - ∅12 - ∅14 - ∅16 - ∅18 -∅20

T137.532N - Collet wiper ER32

X137.004.N - nr. 4 brushes for collet bore ER32

Item
X123.515.N

Set complete with **10 spring collets ER40**:
∅4 - ∅6 - ∅8 - ∅10 - ∅12 - ∅14 - ∅16 - ∅18 - ∅20 - ∅25

T137.540N - Collet wiper ER40

X137.004.N - nr. 4 brushes for collet bore ER40

Item
X124.515.N

Set complete with **10 spring collets DIN6388**:
∅4 - ∅6 - ∅8 - ∅10 - ∅12 - ∅14 - ∅16 - ∅18 - ∅20 - ∅25

T137.662N - Collet wiper DIN6388-EOC25

X137.004.N - nr. 4 brushes for collet bore DIN6388-EOC25

SET IN WOODEN BOX

ART. X118

Complete with concentric chuck ISO30 + 8 spring collets ER32

Item		
X118.700.R		
complete with:		
concentric chuck ISO 30/ER32		
T118.700.R		
spring collets	∅6	T119.060.N
	∅8	T119.080.N
	∅10	T119.100.N
	∅12	T119.120.N
	∅14	T119.140.N
	∅16	T119.160.N
	∅18	T119.180.N
	∅20	T119.200.N

Item		
X118.800.R		
complete with:		
concentric chuck ISO 30/ER32		
T118.800.R		
spring collets	∅6	T119.060.N
	∅8	T119.080.N
	∅10	T119.100.N
	∅12	T119.120.N
	∅14	T119.140.N
	∅16	T119.160.N
	∅18	T119.180.N
	∅20	T119.200.N

SET IN PLASTIC BOX

ART. X118

- Complete with concentric chuck HSK63F + 8 spring collets ER40

Item		
X118.980.R		
complete with:		
concentric chuck HSK63F/ER40		T118.980.R
spring collets	∅6	T123.060.N
	∅8	T123.080.N
	∅10	T123.100.N
	∅12	T123.120.N
	∅16	T123.160.N
	∅18	T123.180.N
	∅20	T123.200.N
	∅25	T123.250.N

SET IN PLASTIC BOX

ART. X118

- Complete with concentric chuck HSK63F + 8 spring collets ER32

Item		
X118.976.R		
complete with:		
concentric chuck HSK63F/ER32		T118.976.R
spring collets	∅6	T119.060.N
	∅8	T119.080.N
	∅10	T119.100.N
	∅12	T119.120.N
	∅14	T119.140.N
	∅16	T119.160.N
	∅18	T119.180.N
	∅20	T119.200.N

SET IN PLASTIC BOX

ART. X118

- Complete with concentric chuck HSK63F with ball bearing nut + 8 spring collets EOC25

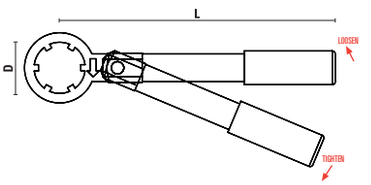
Item		
X118.984.R		
complete with:		
concentric chuck HSK63F/EOC25		T118.984.R
spring collets	∅6	T124.060.N
	∅8	T124.080.N
	∅10	T124.100.N
	∅12	T124.120.N
	∅16	T124.160.N
	∅18	T124.180.N
	∅20	T124.200.N
	∅25	T124.250.N

TORQUE WRENCHES

While setting a tool it is extremely important to tighten it appropriately.
If not effectively tight indeed a cutting tool could slide away from the tool holder during the working process.
On the other side, an excessive tightening can cause damages to the tool holder or spring collet or the tool itself.
The wrench indicates when the torque (Nm) is reached according to the value in the corresponding table.

TORQUE WRENCHES FOR "MINI" NUTS

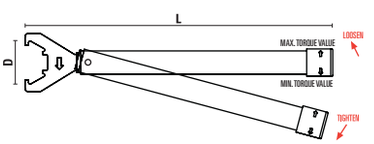
ART. Z052

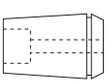


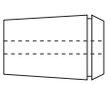
Item	D	L	Nm	Threaded nut
Z052.702.N	22	175	28	ER16 Mini
Z052.704.N	35	185	40	ER25 Mini

TORQUE WRENCHES FOR "STANDARD" NUTS

ART. Z052



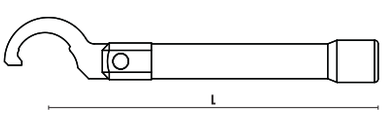
Dr. 1  Collets as per drawing n. 1 must be tightened by setting the minimum torque value and rotating the handle counterclockwise.

Dr. 2  Collets as per drawing n. 2 must be tightened by setting the maximum torque value and rotating the handle clockwise.

Item	D	L	Nm (Dr. 1)	Nm (Dr. 2)	Threaded nut
Z052.712.N	40	400	40-55	80-90	ER25
Z052.713.N	50	400	66-70	120-130	ER32
Z052.714.N	63	450	110-120	190-200	ER40

CHIAVI DINAMOMETRICHE A SETTORE

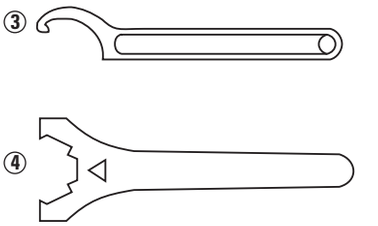
ART. Z052



Item	D	L	Nm (Dr. 1)	Nm (Dr. 2)	Threaded nut
Z052.732.N	58-62	380	110-120	190-200	DIN 6388/EOC25
Z052.735.N	50	380	110-120	190-200	Z091.005.R

KEYS

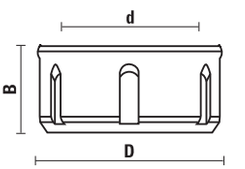
ART. Z052



Item	Draw.	Description	Threaded nut
Z052.300.N	3	Wrench 34/38	DIN6388/EOC12
Z052.301.N	3	Wrench 40/42	Z091.000.R
Z052.305.N	3	Wrench 4850	Z091.005.R
Z052.310.N	3	Wrench 58/62	DIN6388/EOC25
Z052.314.N	4	Wrench for dust & chip extraction nut D=80	
Z052.315.N	4	Wrench for dust & chip extraction nut D=92	
Z052.401.N	4	Wrench for collet nut ER 32 "standard" type	
Z052.402.N	4	Wrench for collet nut ER 40 "standard" type	
Z052.407.N	4	Wrench for collet nut ER 25 "standard" type	

COLLET NUTS

ART. Z091

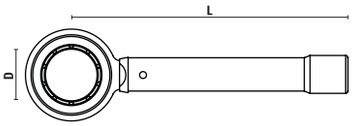


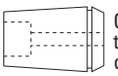
Item	Type	D	B	d	Rot.
Z091.000.R	For spring collets Art. T117	40	20	M 30x1,5	RH
Z091.000.L	For spring collets Art. T117	40	20	M 30x1,5	LH
Z091.001.R	DIN 6499 (ER 32)	50	23	M 40x1,5	RH
Z091.001.L	DIN 6499 (ER 32)	50	23	M 40x1,5	LH
Z091.002.R	DIN 6499 (ER 40)	63	25	M 50x1,5	RH
Z091.002.L	DIN 6499 (ER 40)	63	25	M 50x1,5	LH
Z091.005.R	For spring collets T133	50	23	M 40x1,5	RH
Z091.100.R	DIN 6499 (ER 25) ball bearing nut	42	20	M 32x1,5	RH/LH
Z091.101.R	DIN 6499 (ER 32) ball bearing nut	50	25	M 40x1,5	RH/LH
Z091.102.R	DIN 6499 (ER 40) ball bearing nut	63	27	M 50x1,5	RH/LH
Z091.103.R	DIN 6499 (ER 25)	42	20	M 32x1,5	RH
Z091.104.R	DIN 6499 (ER 20)	35	19	M 25x1,5	RH
Z091.105.R	DIN 6499 (ER 16)	32	17,5	M 22x1,5	RH
Z091.202.R	DIN 6388 (EOC25)	60	30	M 48x2	RH
Z091.203.R	DIN 6388 (EOC25) ball bearing nut	60	30	M 48x2	RH/LH
Z091.205.R	DIN 6388 (EOC12)	35	28	M 27x1,5	RH
Z091.301.R	ETS 32	50	22	M 40x1,5	RH
Z091.302.R	ETS 40	63	25	M 50x1,5	RH
Z091.403.R	ER 25 Type mini	35	20	M 30x1	RH
Z091.404.R	ER 20 Type mini	28	19	M 24x1	RH
Z091.405.R	ER 16 Type mini	22	18	M 19x1	RH
Z091.406.R	ER 11 Type mini	16	12	M 13x0,75	RH

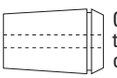
You can find all spare parts in the section n. 10

TORQUE WRENCHES FOR "NO-NOISE" NUTS

ART. Z052



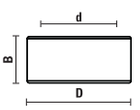
Dr. 1  Collets as per drawing n. 1 must be tightened by setting the minimum torque value and rotating the handle counterclockwise.

Dr. 2  Collets as per drawing n. 2 must be tightened by setting the maximum torque value and rotating the handle clockwise.

Item	D	L	Nm (dis. 1)	Nm (dis. 2)	Threaded nut
Z052.790.N	32	400	25-35	45-55	ER 16
Z052.793.N	50	400	65-70	120-130	ER 32
Z052.795.N	60	400	110-120	190-200	DIN 6388/EOC25

"NO-NOISE" COLLET NUTS

ART. Z091



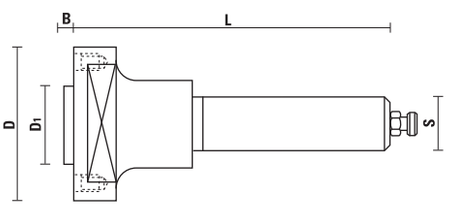
- Recommended when using router bits working at higher RPM
- Threaded nut with ground contours, remarkable reduction of noise

Item	Type	D	B	d	Rot.
Z091.501.R	DIN 6499 (ER 32)	50	23	M 40x1,5	RH
Z091.505.R	DIN 6499 (ER 16)	32	17,5	M 22x1,5	RH
Z091.522.R	DIN 6499 (EOC 25)	60	30	M 48x2	RH

You can find all spare parts in the section n. 10

ADAPTERS FOR CIRCULAR SAWBLADES

ART. T128



- Nr. 4 pin holes with M6/90°
- Complete with nr. 4 screws to fix the sawblade
- Recommended to use sawblades with diameters between 150 and 200 mm
- Item T128.143.R (S=16) is especially made to be mounted on aggregate heads

Item	D	D_1	B	S	L	Pin holes
T128.141.R NEW	60	22	2,5	∅20x60	90	4/4/36

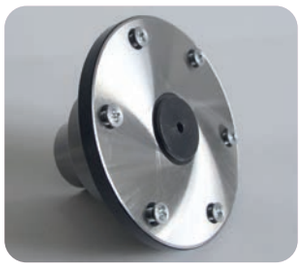
Z051.018.R Z051.506.R

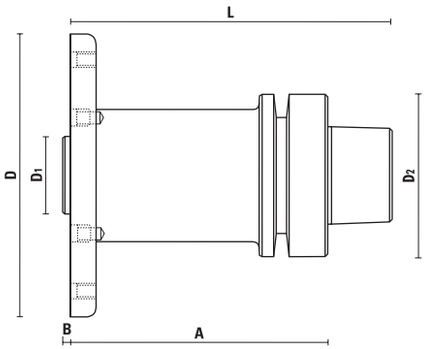
Item	D	D_1	B	S	L	Pin holes
T128.140.R	60	30	2,5	∅20x60	90	4/6/48
T128.143.R NEW	60	30	2,5	∅16x50	85	4/6/48
T128.145.R NEW	60	30	2,5	∅25x60	90	4/6/48

Z051.014.R Z051.506.R

HSK-63 ADAPTERS FOR CIRCULAR SAWBLADES

ART. T128





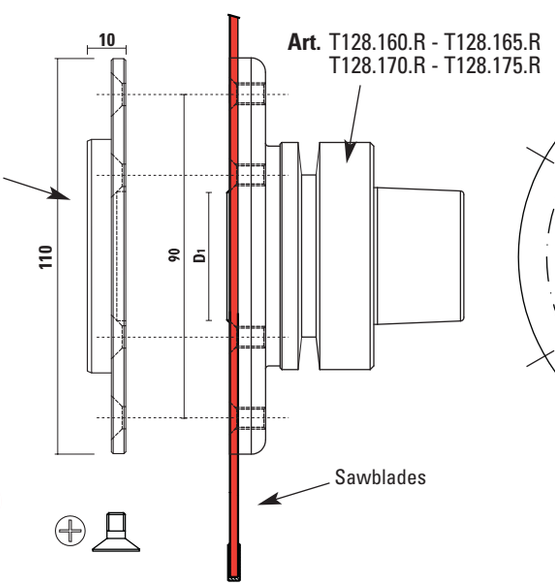
- Complete with nr. 6 screws (M6x10) for the proper assembly of sawblades with 60° at 90 mm distance
- For mounting sawblades with 30 mm bore
- For mounting sawblades with diameter between 200 and 350 mm.

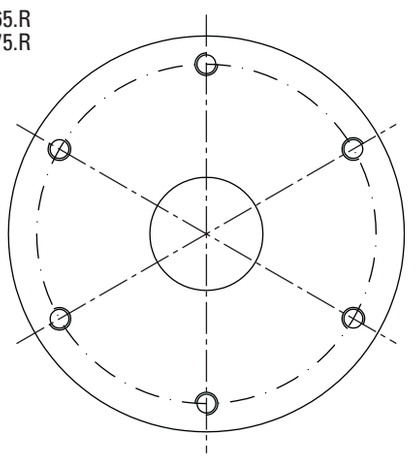
Item	Taper	A	D	D_1	D_2	B	L
T128.160.R	HSK-63F	40	110	30	63	2,5	65
T128.165.R	HSK-63F	100	110	30	63	2,5	125
T128.170.R NEW	HSK-63E	40	110	30	63	2,5	72
T128.175.R NEW	HSK-63E	100	110	30	63	2,5	132

Z051.014.R

EXAMPLE OF USE:
HSK63 adapter with mounted Saw Blade

OPTIONS:
Security flange (item Z092.100.N) to secure sawblades with maximum diameter of 400 mm by changing screws.

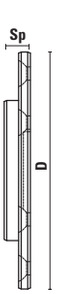




SCREW (ART. Z051.014.R)
M6x10 countersunk flat head screw

SECURITY FLANGE FOR SAW BLADES ADAPTERS

ART. Z092



- To be used with our adapters, see items T128.160/165.R - T128.170/175.R
- **Security flange improves stability and reduces vibrations when precision cuts are needed**
- Complete with nr. 6 screws for the proper assembly of the sawblades with 60° at 90 mm distance
- **Maximum sawblades diameter of 400 mm**

ATTENTION:
Replace the adapters screws with those provided with the security flange.

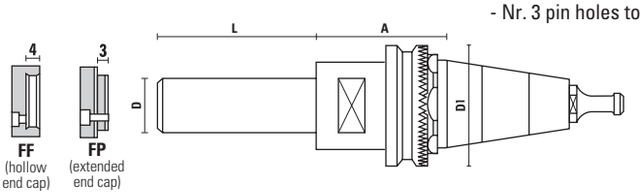
Item	D	Sp
Z092.100.N NEW	110	10

Z051.024.R

CUTTER ARBORS WITH ISO 30 TAPER

ART. T128

- Complete with retaining pawl page 7.39 and end cap page 10.14
- Nr. 3 pin holes to 120°



- Retaining pawl T118.790.R for: **Morbidelli, SCM**

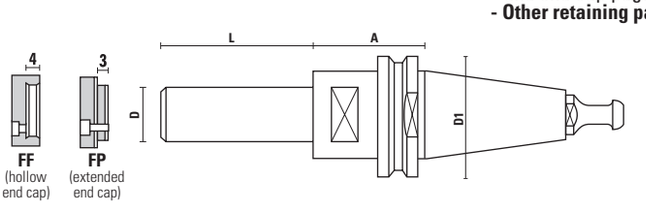
Item	Taper	A	D	D1	L	End cap
T128.690.N	ISO 30	39	30	49	70	FF - Z092.001.R
T128.700.N	ISO 30	39	30	49	100	FF - Z092.001.R
T128.690.NM	ISO 30	39	30	49	70	FP - Z092.002.R
T128.700.NM	ISO 30	39	30	49	100	FP - Z092.002.R

Z051.016.R

CUTTER ARBORS WITH ISO 30 - ISO 40 TAPER

ART. T128

- Complete with retaining pawl page 7.39 and end cap page 10.14
- **Other retaining pawl on request**



Retaining pawl T118.891.R for: **Biesse, Masterwood - Bulleri** (motor **H.S.D.**)

Item	Taper	A	D	D1	L	End cap
T128.790.N	ISO 30	35	30	50	70	FF - Z092.001.R
T128.800.N	ISO 30	35	30	50	100	FF - Z092.001.R
T128.790.NM	ISO 30	35	30	50	70	FP - Z092.002.R
T128.800.NM	ISO 30	35	30	50	100	FP - Z092.002.R
T128.800.N120	ISO 30	35	30	50	120	FF - Z092.001.R
T128.800.N120M	ISO 30	35	30	50	120	FP - Z092.002.R

Retaining pawl T118.792.R for: **Alberti, Vitap, Masterwood** (motor G. Colombo)

Item	Taper	A	D	D1	L	End cap
T128.791.N	ISO 30	35	30	50	70	FF - Z092.001.R
T128.801.N	ISO 30	35	30	50	100	FF - Z092.001.R
T128.791.NM	ISO 30	35	30	50	70	FP - Z092.002.R
T128.801.NM	ISO 30	35	30	50	100	FP - Z092.002.R

Retaining pawl T118.791.R (DIN 69872) for: **Busellato, Weeke, Ima, Bulleri, Maka, Cosmec, Reichenbacher, Elte**

Item	Taper	A	D	D1	L	End cap
T128.792.N	ISO 30	35	30	50	70	FF - Z092.001.R
T128.802.N	ISO 30	35	30	50	100	FF - Z092.001.R
T128.792.NM	ISO 30	35	30	50	70	FP - Z092.002.R
T128.802.NM	ISO 30	35	30	50	100	FP - Z092.002.R

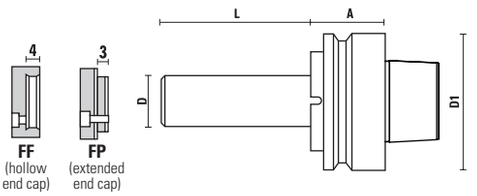
Retaining pawl T118.893.R for: **Ima, Weeke, Maka, Reichenbacher, Stegherr**

Item	Taper	A	D	D1	L	End cap
T128.850.N	ISO 40	35	30	63,5	100	FF - Z092.001.R
T128.850.NM	ISO 40	35	30	63,5	100	FP - Z092.002.R

Z051.016.R

CUTTER ARBORS WITH HSK63F TAPER

ART. T128



- Complete with end cap page 10.14
- Nr. 3 pin holes to 120°

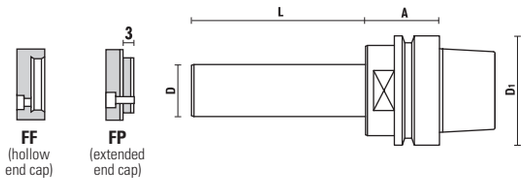
Item	Taper	A	D	D1	L	End cap
T128.970.R	HSK-63F	33	30	63	70	FF - Z092.001.R
T128.970.RM	HSK-63F	33	30	63	70	FP - Z092.002.R
T128.980.R	HSK-63F	33	30	63	100	FF - Z092.001.R
T128.980.RM	HSK-63F	33	30	63	100	FP - Z092.002.R
T128.980.R060M	HSK-63F	33	30	63	60	FP - Z092.002.R
T128.980.R065M	HSK-63F	33	30	63	65	FP - Z092.002.R
T128.980.R075M	HSK-63F	33	30	63	75	FP - Z092.002.R
T128.980.R080M	HSK-63F	33	30	63	80	FP - Z092.002.R
T128.980.R085M	HSK-63F	33	30	63	85	FP - Z092.002.R
T128.980.R090M	HSK-63F	33	30	63	90	FP - Z092.002.R
T128.980.R095M	HSK-63F	33	30	63	95	FP - Z092.002.R
T128.980.R105M	HSK-63F	33	30	63	105	FP - Z092.002.R
T128.980.R110M	HSK-63F	33	30	63	110	FP - Z092.002.R
T128.980.R115M	HSK-63F	33	30	63	115	FP - Z092.002.R
T128.980.R120M	HSK-63F	33	30	63	120	FP - Z092.002.R
T128.980.R125M	HSK-63F	33	30	63	125	FP - Z092.002.R
T128.980.R130M	HSK-63F	33	30	63	130	FP - Z092.002.R
T128.980.R135M	HSK-63F	33	30	63	135	FP - Z092.002.R
T128.980.R140M	HSK-63F	33	30	63	140	FP - Z092.002.R
T128.980.R145M	HSK-63F	33	30	63	145	FP - Z092.002.R
T128.980.R150M	HSK-63F	33	30	63	150	FP - Z092.002.R
T128.980.R180M	HSK-63F	33	30	63	180	FP - Z092.002.R
T128.980.1x125M	HSK-63F	33	1″	63	125	FP - Z092.008.R
T128.980.1,25x125M	HSK-63F	33	1-1/4″	63	125	FP - Z092.010.R
T128.980.35x100	HSK-63F	33	35	63	100	FF - Z092.003.R
T128.980.35x100M	HSK-63F	33	35	63	100	FP - Z092.004.R
T128.980.40x100	HSK-63F	33	40	63	100	FF - Z092.005.R
T128.980.40x100M	HSK-63F	33	40	63	100	FP - Z092.006.R

Item	Type	A	D	D1	L	End cap
T128.972.R	HSK-63F	42	30	63	70	FF - Z092.001.R
T128.972.RM	HSK-63F	42	30	63	70	FP - Z092.002.R
T128.982.R	HSK-63F	42	30	63	100	FF - Z092.001.R
T128.982.RM	HSK-63F	42	30	63	100	FP - Z092.002.R
T128.982.R080	HSK-63F	42	30	63	80	FF - Z092.001.R
T128.982.R080M	HSK-63F	42	30	63	80	FP - Z092.002.R
T128.982.R125	HSK-63F	42	30	63	125	FF - Z092.001.R
T128.982.R125M	HSK-63F	42	30	63	125	FP - Z092.002.R
T128.982.1,25x125M	HSK-63F	42	1-1/4″	63	125	FP - Z092.010.R
T128.982.35x100	HSK-63F	42	35	63	100	FF - Z092.003.R
T128.982.35x100M	HSK-63F	42	35	63	100	FP - Z092.004.R

Z051.016.R

CUTTER ARBORS WITH HSK-63E TAPER

ART. T128



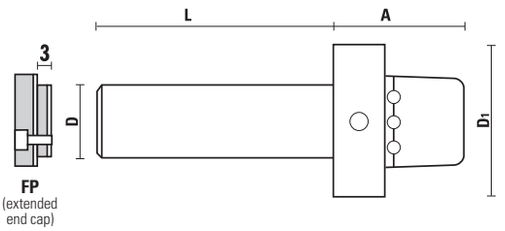
- Complete with end cap page 10.14
- Nr. 3 pin holes to 120°

Item	Taper	A	D	D1	L	End cap
T128.988.R	HSK-63E	42	30	63	100	FF - Z092.001.R
T128.988.RM NEW	HSK-63E	42	30	63	100	FP - Z092.002.R
T128.988.R140M NEW	HSK-63E	42	30	63	140	FP - Z092.002.R
T128.988.R160M NEW	HSK-63E	42	30	63	160	FP - Z092.002.R
T128.988.R180M NEW	HSK-63E	42	30	63	180	FP - Z092.002.R
T128.988.R190M NEW	HSK-63E	42	30	63	190	FP - Z092.002.R
T128.988.R220M NEW	HSK-63E	42	30	63	220	FP - Z092.002.R
T128.988.R230M NEW	HSK-63E	42	30	63	230	FP - Z092.002.R
T128.988.35x100 NEW	HSK-63E	42	35	63	100	FF - Z092.003.R
T128.988.35x100M NEW	HSK-63E	42	35	63	100	FP - Z092.004.R
T128.988.35x130M NEW	HSK-63E	42	35	63	130	FP - Z092.004.R
T128.988.35x150M NEW	HSK-63E	42	35	63	150	FP - Z092.004.R
T128.988.35x180M NEW	HSK-63E	42	35	63	180	FP - Z092.004.R
T128.988.35x200M NEW	HSK-63E	42	35	63	200	FP - Z092.004.R
T128.988.40x100 NEW	HSK-63E	42	40	63	100	FF - Z092.005.R
T128.988.40x100M NEW	HSK-63E	42	40	63	100	FP - Z092.006.R
T128.988.40x150M NEW	HSK-63E	42	40	63	150	FP - Z092.006.R
T128.988.40x200M NEW	HSK-63E	42	40	63	200	FP - Z092.006.R

Z051.016.R

CUTTER ARBORS WITH HSK-85 TAPER

ART. T130 - T131 - T132



- Complete with end cap page 10.14
- Nr. 3 pin holes to 120°

for: **Weinig Powerlock system**

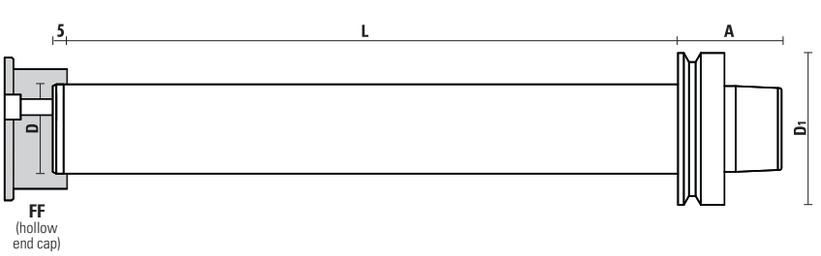
Item	Taper	A	D	D1	L	End cap
T130.060.N	HSK-85	58	30	85	60	FP - Z092.002.R
T130.080.N	HSK-85	58	30	85	80	FP - Z092.002.R
T130.100.N	HSK-85	58	30	85	100	FP - Z092.002.R
T130.130.N	HSK-85	58	30	85	130	FP - Z092.002.R
T130.150.N	HSK-85	58	30	85	150	FP - Z092.002.R
T130.180.N	HSK-85	58	30	85	180	FP - Z092.002.R
T130.200.N	HSK-85	58	30	85	200	FP - Z092.002.R
T130.230.N	HSK-85	58	30	85	230	FP - Z092.002.R
T130.240.N	HSK-85	58	30	85	240	FP - Z092.002.R
T131.080.N	HSK-85	58	35	85	80	FP - Z092.004.R
T131.100.N	HSK-85	58	35	85	100	FP - Z092.004.R
T131.120.N	HSK-85	58	35	85	120	FP - Z092.004.R
T131.150.N	HSK-85	58	35	85	150	FP - Z092.004.R
T131.200.N	HSK-85	58	35	85	200	FP - Z092.004.R
T132.060.N	HSK-85	58	40	85	60	FP - Z092.006.R
T132.080.N	HSK-85	58	40	85	80	FP - Z092.006.R
T132.100.N	HSK-85	58	40	85	100	FP - Z092.006.R
T132.130.N	HSK-85	58	40	85	130	FP - Z092.006.R
T132.150.N	HSK-85	58	40	85	150	FP - Z092.006.R
T132.180.N	HSK-85	58	40	85	180	FP - Z092.006.R
T132.200.N	HSK-85	58	40	85	200	FP - Z092.006.R
T132.240.N	HSK-85	58	40	85	240	FP - Z092.006.R

Z051.016.R

CUTTER ARBORS WITH HSK-85S TAPER

ART. T132

- Complete with end cap page 10.14
- Nr. 3 pin holes to 120°



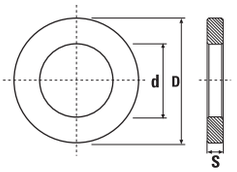
for: **SCM**

Item	Taper	A	D	D1	L	End cap
T132.320.NS	HSK-85S	58	50	85	320	FF - Z092.050.R

Z051.016.R

SPACERS 2-SIDES GRINDED

ART. YD300 - YD350 - YD400 - YD500 - YD600



- For arbors Art. T128 - Art. T130 - Art. T131 - Art. T132
- Burnished
- **Spacer rings fine-blanking processed for thickness 0,1÷1 mm (tolerance ± 0,02)**
- **Spacer rings grinded on two sides for thickness 2÷50 mm (tolerance ± 0,01)**

Item	d	D	S
YD300.001	30	50	0,1
YD300.002	30	50	0,2
YD300.005	30	50	0,5
YD300.010	30	50	1
YD300.020	30	50	2
YD300.030	30	50	3
YD300.040	30	50	4
YD300.050	30	50	5
YD300.060	30	50	6
YD300.080	30	50	8
YD300.100	30	50	10
YD300.120	30	50	12
YD300.150	30	50	15
YD300.200	30	50	20
YD300.250	30	50	25
YD300.300	30	50	30
YD300.400	30	50	40
YD300.500	30	50	50
YD350.001	35	55	0,1
YD350.002	35	55	0,2
YD350.005	35	55	0,5
YD350.010	35	55	1
YD350.020	35	55	2
YD350.030	35	55	3
YD350.040	35	55	4
YD350.050	35	55	5
YD350.060	35	55	6
YD350.080	35	55	8
YD350.100	35	55	10
YD350.120	35	55	12
YD350.150	35	55	15
YD350.200	35	55	20
YD350.250	35	55	25
YD350.300	35	55	30
YD350.400	35	55	40
YD350.500	35	55	50

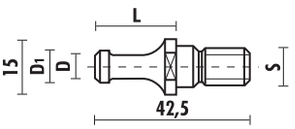
Item	d	D	S
YD400.001	40	60	0,1
YD400.002	40	60	0,2
YD400.005	40	60	0,5
YD400.010	40	60	1
YD400.020	40	60	2
YD400.030	40	60	3
YD400.040	40	60	4
YD400.050	40	60	5
YD400.060	40	60	6
YD400.080	40	60	8
YD400.100	40	60	10
YD400.120	40	60	12
YD400.150	40	60	15
YD400.200	40	60	20
YD400.250	40	60	25
YD400.300	40	60	30
YD400.400	40	60	40
YD400.500	40	60	50
YD500.001	50	70	0,1
YD500.002	50	70	0,2
YD500.005	50	70	0,5
YD500.010	50	70	1
YD500.020	50	70	2
YD500.030	50	70	3
YD500.040	50	70	4
YD500.050	50	70	5
YD500.060	50	70	6
YD500.080	50	70	8
YD500.100	50	70	10
YD500.120	50	70	12
YD500.150	50	70	15
YD500.200	50	70	20
YD500.250	50	70	25
YD500.300	50	70	30
YD500.400	50	70	40
YD500.500	50	70	50
YD600.001	60	80	0,1
YD600.002	60	80	0,2
YD600.005	60	80	0,5
YD600.010	60	80	1
YD600.020	60	80	2
YD600.030	60	80	3
YD600.040	60	80	4
YD600.050	60	80	5
YD600.060	60	80	6
YD600.080	60	80	8
YD600.100	60	80	10
YD600.120	60	80	12
YD600.150	60	80	15
YD600.200	60	80	20
YD600.250	60	80	25
YD600.300	60	80	30
YD600.400	60	80	40
YD600.500	60	80	50

SPACERS SET

ART. YD300 - YD350 - YD400 - YD500 - YD600

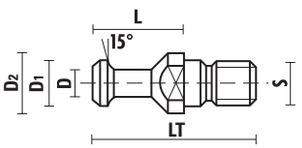
Item	d	D
YD300.990	30	50
YD350.990	35	55
YD400.990	40	60
YD500.990	50	70
YD600.990	60	80
Complete with:		
nr. 4 sp. 2 mm - **nr. 3** sp. 4 mm - **nr. 2** sp. 5 mm		
nr. 2 sp. 10 mm - **nr. 1** sp. 20 mm - **nr. 1** sp. 30 mm		

RETAINING PAWLS FOR CONCENTRIC CHUCK
ART. T118



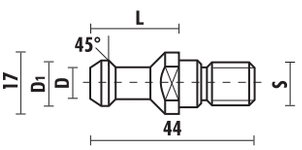
For: **Morbidelli, SCM**

Item	Type	D1	D	L	S
T118.790.R	ISO 30	8,5	6,5	22	M10



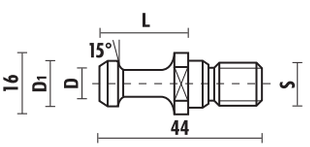
DIN 69872 for:
Anderson, Busellato, Weeke, Ima, Bulleri, Maka, Cosmec, Reichenbacher, Elte

Item	Type	D1	D2	D	L	LT	S
T118.791.R	ISO 30	13	17	9	24	44	M12
T118.893.R	ISO 40	19	23	14	26	54	M16



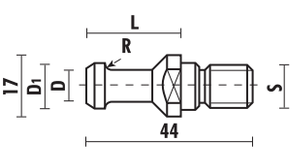
For: **Alberti, Vitap, Masterwood** (motor G. Colombo)

Item	Type	D1	D	L	S
T118.792.R	ISO 30	12,8	9	24	M12



For: **Esseteam**

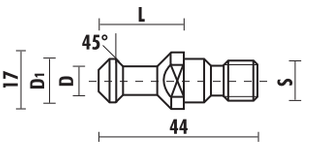
Item	Type	D1	D	L	S
T118.793.R	ISO 30	12	8	24	M12



For: **CMS**

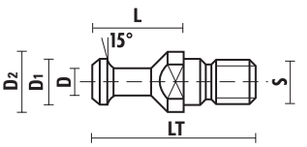
Item	Type	D1	D	L	R	S
T118.794.R	ISO 30	12,8	9	24	2,4	M12

RETAINING PAWLS FOR CONCENTRIC CHUCK
ART. T118



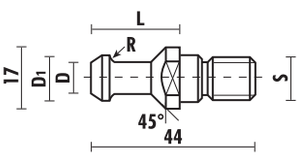
For: **Belotti**

Item	Type	D1	D	L	S
T118.795.R	ISO 30	13	9	23	M12



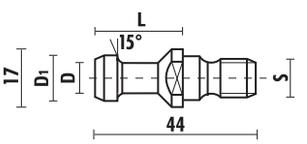
For: **Biesse** (until 9/9/92)

Item	Type	D1	D	L	S
T118.890.R	ISO 30	13	9	24	M12



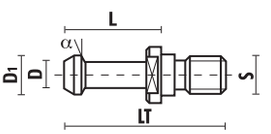
For: **Biesse** (after 9/9/92), **Masterwood** (motor H.S.D.), **Bulleri**, **Thermwood**, **Vitap**

Item	Type	D1	D	L	R	S
T118.891.R	ISO 30	12	8	24	3,2	M12



For: **Komo**

Item	Type	D1	D	L	S
T118.894.R	BT 30	13	9	24	M12



For: BT 30 - BT 40 **Shoda**, BT 35 **Heian**

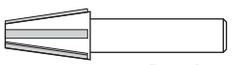
Item	Type	D1	D	L	LT	α	S
T118.895.R	BT 30	11	7	23,5	43	30°	M12
T118.896.R	BT 35	13	8,5	28	48	45°	M12
T118.896.R030	BT 35	13	8,5	28	48	30°	M12
T118.897.R	BT 40	15	10	35	60	45°	M16

MACHINES AND TOOLS MAINTENANCE:

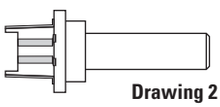
Coupling seats in the electrospindles, in the collet chucks or in the spring collets should be always clean and spotless in order to avoid a wrong position of the tool causing bad finishing results or even tool breakage.
By using regularly the tapers Klein these risks are reduced and the tool life span is highly increased.

SPINDLE WIPERS

ART. T137



Drawing 1



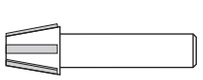
Drawing 2

- To maintain the inside of the spindle mouth clean
- Ensures extreme cleanliness of tapered spindles and it maintains the precision and prolongs the life of your expensive machines, cutting tools and toolholders
- To **avoid wrong positioning of the holders and ensure best contact between tool and tool holder for a better coupling**
- Suitable for all tool holder types
- A **proper maintenance** of the collet and the spindle with Klein® products will allow your tooling to live longer with better performance

Item	Concentric chuck	Drawing
T137.002.N	Taper 2 (MK2)	1
T137.003.N	Taper 3 (MK3)	1
T137.030.N	ISO 30/BT 30	1
T137.040.N	ISO 40/BT 40	1
T137.125.N NEW	HSK25 A - C - E	2
T137.132.N NEW	HSK32 A - C - E	2
T137.140.N NEW	HSK40 A - C - E	2
T137.150.N NEW	HSK50 A - C - E	2
T137.250.N NEW	HSK50 B - D - F	2
T137.163.N	HSK63 A - C - E	2
T137.263.N	HSK63 B - D - F	2

CONE AND COLLET WIPERS

ART. T137



- To maintain the inside of the collet clean
- To avoid wrong positioning of the collet due to resin
- For all collet types

Item	Collet type
T137.516.N NEW	ER16
T137.520.N NEW	ER20
T137.525.N	ER 25-ETS 25-DIN6499
T137.532.N	ER 32-ETS 32-DIN6499
T137.540.N	ER 40-ETS 40-DIN6499
T137.662.N	EOC 25-DIN 6388

BRUSHES FOR COLLET BORE

ART. T137

- To clean the collet bore
- To avoid wrong tool positioning caused by resin

Item	Collet bore
T137.906.N	3÷6
T137.911.N	6,4÷11
T137.918.N	12÷18
T137.925.N	19÷25
X137.004.N	**Collet brush set 3÷25**

WIPE OFF KIT FOR CNC

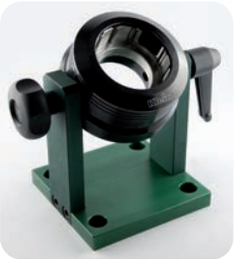
ART. X137

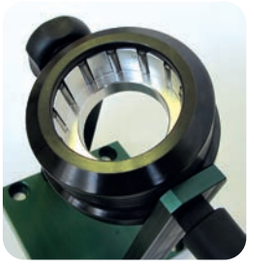
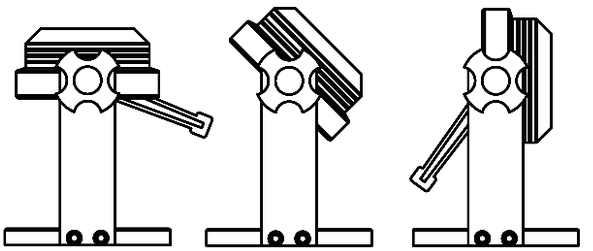
- For a perfect maintenance of your CNC router or machining centres
- For cleaning boring machines and CNC router machines. Ensures **extreme cleanliness of tapered spindles and it maintains the precision and prolongs the life of your expensive machines, cutting tools and toolholders**
- Carton box
- Available for every tool holders cone and spring collets
- A complete set with:
  - Cone and spindle wiper for every kind of tool holder (Item T137);
  - Collet wiper to avoid wrong positioning of the collet (Item T137);
  - No° 4 brushes for collet bore (Item X137)

Item		Description
X137.000.N	HSK63F/ER32	T137.263.N + T137.532.N + X137.004.N
X137.001.N	ISO30/ER32	T137.030.N + T137.532.N + X137.004.N
X137.002.N	HSK63F/DIN6388	T137.263.N + T137.662.N + X137.004.N
X137.003.N NEW	HSK25E/ER 16	T137.125.N + T137.516.N + X137.004.N
X137.005.N	HSK63F/ER40	T137.263.N + T137.540.N + X137.004.N
X137.006.N	ISO30/ER40	T137.030.N + T137.540.N + X137.004.N
X137.010.N NEW	HSK32E/ER25	T137.132.N + T137.525.N + X137.004.N
X137.011.N NEW	HSK40E/ER25	T137.140.N + T137.525.N + X137.004.N
X137.012.N NEW	HSK50E/ER32	T137.150.N + T137.532.N + X137.004.N
X137.013.N NEW	HSK50F/ER32	T137.250.N + T137.532.N + X137.004.N

ADJUSTABLE DEMOUNT DEVICES

ART. T139



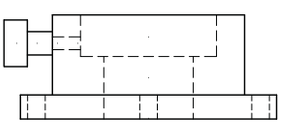
- The tool holder has to be blocked on the flange diameter which is made in special and durable steel
- Auto-locking roller bearing design for the fastest tool changes and no slippage.
- It is adjustable from 0° to 90°
- Wide range of tightening stand/locking devices available for HSK32, HSK40, HSK50, HSK63, ISO30 and ISO40 spindles
- Easy to be mount near the machine thanks to four holes on the basement. NB: Tightening device must be fixed before using.

Watch the Video on YouTube

Item	Machine
T139.132.N NEW	For HSK32 tool holder ∅ 32 mm
T139.140.N NEW	For HSK40 tool holder ∅ 40 mm
T139.150.N	For ISO 30/HSK63 tool holder ∅ 50 mm
T139.158.N	For ISO 30 tool holder ∅ 58 (Motor ELTE/ESSETEAM/THERMWOOD)
T139.163.N	For HSK63 tool holder ∅ 63
T139.164.N	For ISO 40 tool holder ∅ 63,5

DEMOUNT DEVICES FOR FLANGE ∅80 - ∅85

ART. T139

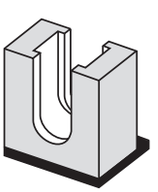



Tool holder to be blocked on the flange diameter

Item	
T139.180.N	For tool holder ∅ 80 mm
T139.185.N	For tool holder ∅ 85 mm (Weinig, SCM)

DEMOUNT DEVICES

ART. T139

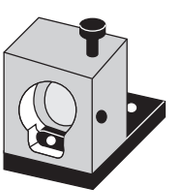



Suitable for toolholders with key seat 41 mm

Item	
T139.003.N selling out	For ISO 40 tool holder ∅ 63,5

ISO 30 DEMOUNT DEVICES

ART. T139

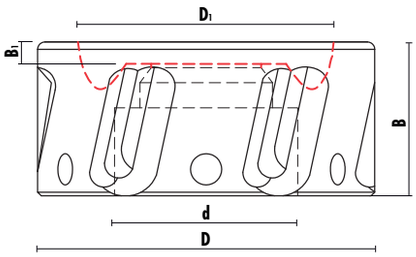
- For ISO30 special
- Horizontal and vertical type

Item	Machine
T139.001.N selling out	Morbidelli - SCM

DUST & CHIP EXTRACTION NUT

ART. T139

Tornado®



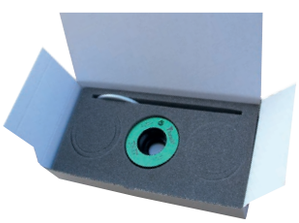
- **Tool body in light alloy with a special surface coating against wear and corrosion for a maximum chips evacuation**
- Optimal gap between Tornado® and material is 2 mm (0.078"). It works properly up to 10 mm (0.38")
- Smaller diameter: (92 mm) in order to be mounted on every CNC router/machining centre
- **Suitable for every type of collet chuck** (HSK, ISO, BT, ...)
- Maximum speed rotation at 20.000 RPM
- Balanced at G2,5, weight 0,256 kg

Watch the Video on YouTube

Item	Type	D	D_1	B	B_1	d	Rot.
T139.501.RK NEW	DIN6499 (ER32)	92	70	40	6	M 40x1,5	RH
T139.502.RK NEW	DIN6499 (ER40)	92	70	42	6	M 50x1,5	RH
T139.503.RK NEW	DIN6499 (ER25)	92	70	42	6	M 32x1,5	RH
T139.522.RK NEW	DIN6388 (EOC25)	92	70	42	6	M 48x2	RH
T139.581.RK NEW	DIN6499 (ER32)	80	64	42	6	M 40x1,5	RH

DUST & CHIP EXTRACTION NUT SET

ART. X139



- Complete with:
  n° 1 extraction nut
  n° 1 hook wrench:
  ∅ 92= key 95/100
  ∅ 80= key 80/90
- Carton box

Item	Description	Type
X139.501.RK NEW	T139.501.RK + Z052.315.N	DIN6499 (ER32)
X139.502.RK NEW	T139.502.RK + Z052.315.N	DIN6499 (ER40)
X139.503.RK NEW	T139.503.RK + Z052.315.N	DIN6499 (ER25)
X139.522.RK NEW	T139.522.RK + Z052.315.N	DIN6388 (EOC25)
X139.581.RK NEW	T139.581.RK + Z052.314.N	DIN6499 (ER32)

Tornado: the new dust & chips extraction nut helps both dust and chip evacuation during Nesting and conventional CNC Routing operations. Easy to assemble directly on the collet chuck instead of the standard nut, the new Klein Tornado ®provides a big improvement of dust evacuation, removing it from the workpiece directly into the centralized extraction system of the CNC machines.

DUST & CHIP EXTRACTION NUT SET

ART. X139

- Complete with:
  n° 2 extraction nuts (ER32 - ER40)
  n° 1 hook wrench 95/100
- Carton box

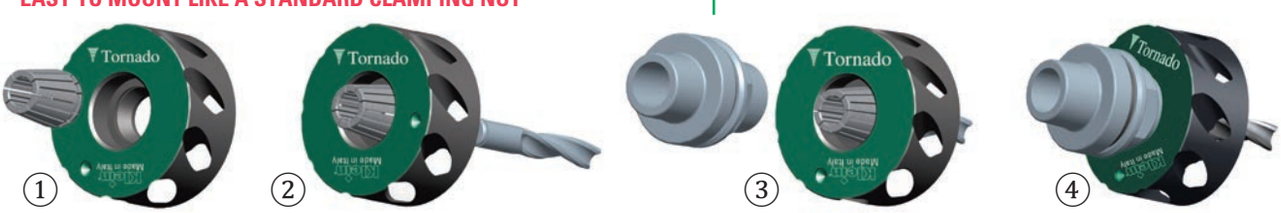
Item	Description
X139.990.RK NEW	T139.501.RK + T139.502.RK + Z052.315.N

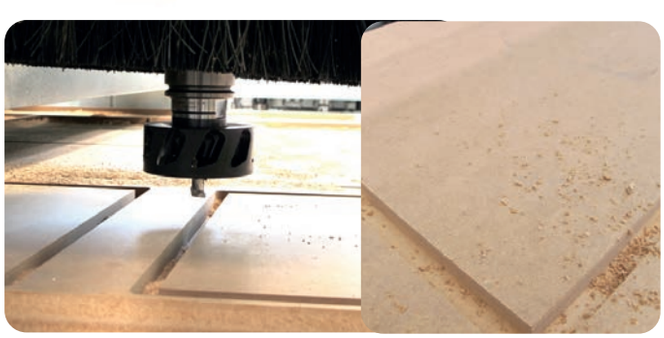
TORQUE WRENCHES

ART. Z052

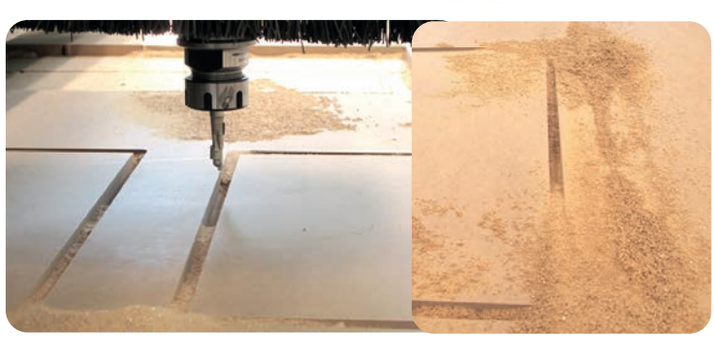
Item	Type	L
Z052.722.N NEW	DIN6499 (ER25)	480
Z052.723.N NEW	DIN6499 (ER32)	480
Z052.724.N NEW	DIN6499 (ER40)	480
Z052.728.N NEW	DIN6388 (EOC25)	480

EASY TO MOUNT LIKE A STANDARD CLAMPING NUT





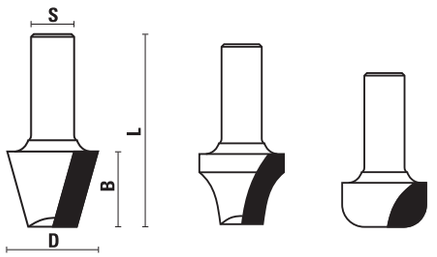
WORKING WITH TORNADO



WORKING WITHOUT TORNADO

PROFILE CUTTERS, GROUP 1

ART. T130



- HW and HS
- Z=2
- RH rotation

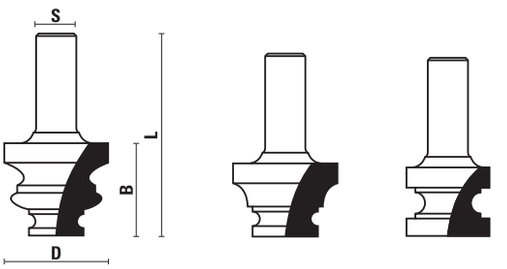
D	B
11÷20	20
11÷20	30
11÷20	40
11÷20	50
21÷30	20
21÷30	30
21÷30	40
21÷30	50
21÷30	60
31÷40	20
31÷40	30
31÷40	40
31÷40	50
31÷40	60
41÷50	20
41÷50	30
41÷50	40
41÷50	50
41÷50	60
51÷60	30
51÷60	40
51÷60	50
51÷60	60
61÷70	30
61÷70	40
61÷70	50
71÷80	30
71÷80	40
81÷90	30
81÷90	40
91÷100	30
91÷100	40
101÷120	30

Price depends on the diameter and length of the cutters.
For a specific quote a detailed drawing or a sample are required.

Insert router bits see page 9.09

PROFILE CUTTERS, GROUP 2

ART. T131



- HW and HS
- Z=2
- RH rotation

D	B
11÷20	20
11÷20	30
11÷20	40
11÷20	50
21÷30	20
21÷30	30
21÷30	40
21÷30	50
21÷30	60
31÷40	20
31÷40	30
31÷40	40
31÷40	50
31÷40	60
41÷50	20
41÷50	30
41÷50	40
41÷50	50
41÷50	60
51÷60	30
51÷60	40
51÷60	50
51÷60	60
61÷70	30
61÷70	40
61÷70	50
71÷80	30
71÷80	40
81÷90	30
81÷90	40
91÷100	30
91÷100	40
101÷120	30

Price depends on the diameter and length of the cutters.
For a specific quote a detailed drawing or a sample are required.

Insert router bits see page 9.09

SOLID CARBIDE ROUTER BITS:

Useful information:

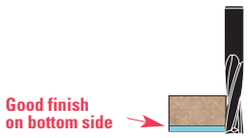
Klein offers a very wide range of solid carbide router bits which can satisfy almost all exigencies by using a CNC machine.

TECHNICAL DATA:

• Tungsten-carbide (Widia): is the most suitable material to use on CNC machines assuring the best performances.

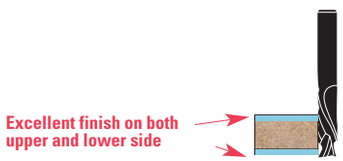
• FLUTE GEOMETRY:

- Up Cut style, **for a better finish on the bottom of the material**



- Down Cut Style, **for a better finish on the top surface**

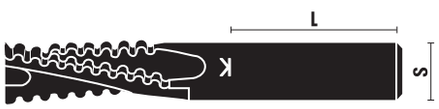
- Compression Style, **for a good finish on either top and bottom surface, particularly on laminated materials**



• NUMBER OF TEETH: **Z=1**: allow heavy duties on soft materials and an excellent chip evacuation
Z=2: allow a better finish on hard materials and a good chip evacuation
Z=3: allow an excellent finish on all types of materials
Z=2/Z=3 with chipbreaker: ideal for heavy duties

N.B.: *Increasing the number of teeth should increase also the feed speed in order to preserve the tool from burning or early wearing out.*

Minimum clamping tool length	
Shank diameter **S** (mm)	Minimum length ⋊ (mm)
S ≤ 10	⋊ ≥ 20
10 < **S** < 25	⋊ = **S** x 2
S ≥ 25	⋊ = **S** x 1,8



N.B.:
*All **Klein** spiral router bits have technical data, dimensions and type of material marked on the shank. Moreover the sign ⋊ indicates the minimum clamping length according to the standard EN847-2*

The following reference tables are provided just as a guide, while various other conditions must be always taken in consideration, such as the characteristics of the wood piece (humidity, veins, etc.), the machine and tooling conditions, etc.

HOW TO CHOSE THE RIGHT SOLID CARBIDE SPIRAL BIT FOR ROUTING ON A CNC MACHINE

Woods / Router Bits Klein	Softwood (Cider, Poplar, Pine, etc.)	Hardwood (Ash, Walnut, Beech, Oak, Teak, etc.)	Pressed Wood (Plywood, Blockboard)	Laminated Wood (Veneered, melamine coated panels, HPL, etc.)
T141/T151 - Z=1 - Page 7.46/7.50	XXX	XXX	X	-
T142/T152 - Z=2 - Page 7.47/7.51	XXX	XXX	X	XX
T143/T153 - Z=3 - Page 7.48/7.51	XX	XX	XXX	XXX
T144/T154 - Z=3 With chipbreaker Page 7.49/7.51-7.52	XXX	XXX	XXX	XX
T155 - Z=1+1 - Page 7.52	XX	XX	X	X
T156 - Z=2+2 - Page 7.53	X	XX	XXX	XXX
T170/T171 - Z=2 With chipbreaker Page 7.56	X	X	XX	XX

X = Satisfactory

XX = Good

XXX = Excellent

- = not suggested

REFERENCE TABLE FOR CALCULATING FEEDING RATES IN THE WOODWORKING

Reference table for calculating feeding rates (mt/min $^{-1}$)					
DIAMETER	ITEM	SOFTWOOD	HARDWOOD	MDF	LAMINATED WOOD
∅ 3	T141	2,40	2,40	2,40	-
	T142	3,20	2,60	3,00	-
	T143	-	-	-	-
	T144	-	-	-	-
	T156	-	-	-	-
∅ 6	T141	3,70	3,60	3,40	-
	T142	4,00	3,70	3,90	-
	T143	-	-	-	-
	T144	-	-	-	-
	T156	-	-	-	-
∅ 8	T141	4,30	4,00	3,80	-
	T142	5,00	4,30	4,90	-
	T143	6,00	4,60	5,20	5,80
	T144	8,20	6,60	6,80	-
	T156	6,60	5,20	5,70	6,50
∅ 10	T141	4,90	4,90	3,80	-
	T142	6,20	4,60	5,40	-
	T143	7,30	5,00	6,10	6,80
	T144	9,10	6,60	7,40	-
	T156	6,70	5,10	6,00	6,60
∅ 12	T141	5,10	4,90	4,20	-
	T142	6,50	5,20	5,40	-
	T143	7,90	6,30	6,80	7,40
	T144	10,20	8,10	8,30	-
	T156	6,90	5,10	6,00	6,70
∅ 16	T141	-	-	-	-
	T142	7,70	6,10	6,90	-
	T143	9,50	7,90	8,10	9,10
	T144	11,80	9,00	9,50	-
	T156	7,30	6,00	6,30	6,80
∅ 20	T141	-	-	-	-
	T142	8,60	7,30	7,90	-
	T143	10,80	8,50	8,90	10,00
	T144	15,00	11,00	11,90	-
	T156	8,00	6,90	7,20	7,00

THE RECOMMENDED FEED RATES WERE CALCULATED TAKING IN CONSIDERATION THE FOLLOWING PARAMETERS:

- **efficient machinery** in excellent conditions;
- **wood piece** perfectly clamped;
- **working solid material** (if not, parameters can be increased)
- **wood piece dry;**
- RPM 18.000 (working at a different rotation speed the feed rate should change accordingly)
- cutting depth two times the router bit diameter (the feed rate increases by 25% when the cutting depth is like the tool diameter – the feed rate decreases by 25% when the cutting depth is three times the tool diameter)
- router bits up cute style
- better use down cut router bits if the vacuum clamping is not strong enough
- using down cut style bits we suggest a maximum cutting depth like the half of the tool diameter, otherwise there is not enough chip flow

SISTEMI suggest:

for working softwood

	Good	Excellent
Single pass	T155+T141/T151	T142/T152
Roughing	T144/T154	T144/T154
Finishing	T142/T152	T143/T153

for working hardwood

	Good	Excellent
Single pass	T142/T152	T142/T152
Roughing	T144/T154	T144/T154
Finishing	T142/T152	T143/T153

for working MDF

	Good	Excellent
Single pass	T142	T145
Roughing	T170	T144
Finishing	T145	T143

for working laminated and veneered chipboard

	Good	Excellent
Single pass	T156	T156

for working hard plastic (nylon, corian®, acrylic)

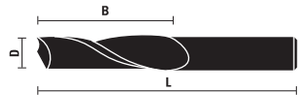
	Good	Excellent
Single pass	T141	T142
Roughing	T170	T144
Finishing	T156/T142	T156/T142

Conversion chart inch/mm

Inches - Millimeters	Inches - Millimeters
1/32" = 0,794	3/8" = 9,525
1/16" = 1,588	1/2" = 12,7
1/8" = 3,175	5/8" = 15,875
3/16" = 4,762	3/4" = 19,050
1/4" = 6,35	7/8" = 22,225
5/16" = 7,938	1" = 25,4

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=1

ART. T141



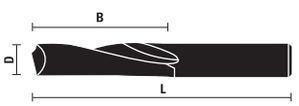
- Right-hand rotation with "UP CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	Z
T141.030.R	3	12	50	1
T141.040.R	4	12	50	1
T141.050.R	5	17	50	1
T141.060.R	6	17	60	1
T141.061.R	6	27	60	1
T141.064.R	6,4	28	60	1
T141.080.R	8	22	80	1
T141.081.R	8	32	80	1
T141.100.R	10	32	80	1
T141.101.R	10	42	100	1
T141.120.R	12	32	80	1
T141.121.R	12	42	100	1

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=1

ART. T141

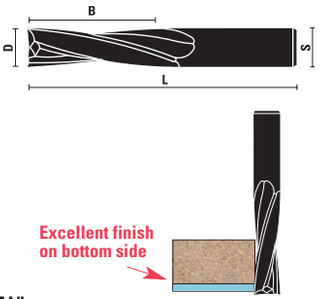


- Left-hand rotation with "DOWN CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

LH rotation	D	B	L	Z
T141.061.L	6	27	60	1
T141.080.L	8	22	80	1
T141.081.L	8	32	80	1
T141.100.L	10	32	100	1

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=2

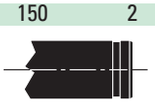
ART. T142



- Right-hand rotation with "UP CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

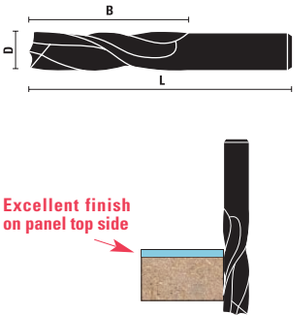
RH rotation	D	B	L	Z
T142.030.R	3	12	50	2
T142.032.R NEW	1/8″	1/2″	2″	2
T142.040.R	4	12	50	2
T142.048.R NEW	3/16″	3/4″	2″	2
T142.050.R	5	17	50	2
T142.060.R	6	17	60	2
T142.061.R	6	27	60	2
T142.064.R NEW	1/4″	3/4″	2″	2
T142.065.R NEW	1/4″	1-1/4″	2-1/2″	2
T142.079.R NEW	5/16″	1″	2-1/2″	2
T142.080.R	8	22	80	2
T142.081.R	8	35	80	2
T142.095.R NEW	3/8″	1-1/4″	3″	2
T142.100.R	10	35	80	2
T142.101.R	10	45	100	2
T142.110.R	11	35	80	2
T142.111.R	11	45	100	2
T142.120.R	12	35	80	2
T142.121.R	12	45	100	2
T142.122.R	12	55	100	2
T142.127.R NEW	1/2″	1-1/4″	3″	2
T142.128.R NEW	1/2″	2″	4″	2
T142.140.R	14	45	100	2
T142.141.R	14	55	100	2
T142.142.R	14	80	140	2
T142.160.R	16	45	100	2
T142.161.R	16	55	100	2
T142.162.R	16	72	120	2
T142.180.R	18	55	100	2
T142.181.R	18	72	120	2
T142.182.R	18	102	150	2
T142.200.R	20	55	100	2
T142.201.R	20	72	120	2
T142.202.R	20	102	150	2

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings



SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=2

ART. T142



- Left-hand rotation with "DOWN CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

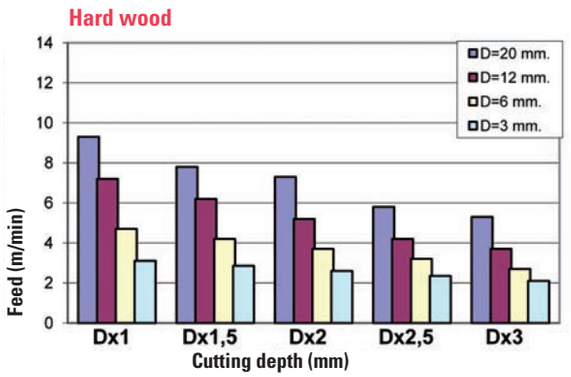
LH rotation	D	B	L	Z
T142.030.L	3	12	50	2
T142.040.L	4	12	50	2
T142.060.L	6	17	60	2
T142.081.L	8	35	80	2
T142.100.L	10	35	80	2
T142.120.L	12	35	90	2
T142.140.L	14	45	100	2
T142.160.L	16	45	100	2
T142.161.L	16	55	100	2
T142.180.L	18	55	115	2
T142.182.L	18	102	165	2
T142.200.L	20	55	120	2

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

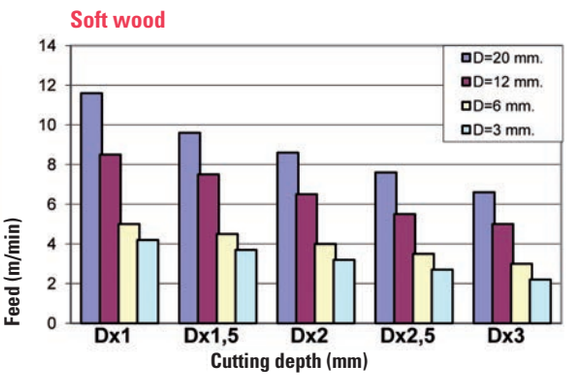
HOW TO DETERMINE THE FEEDING SPEED RELATING TO THE DIAMETER:

- Referring to item T142 with right hand rotation (UP CUT STYLE), Z=2
- RPM 18.000

Hard wood

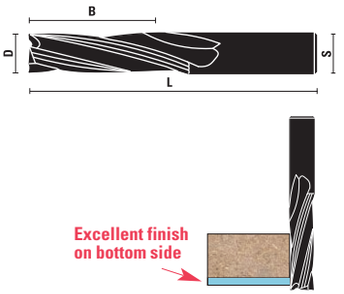


Soft wood



SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=3

ART. T143



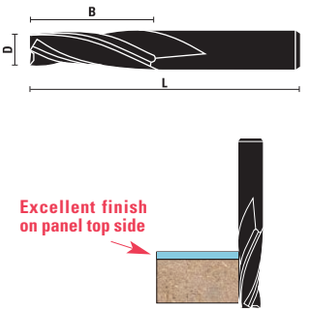
- Right-hand rotation with "UP CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	Z
T143.080.R	8	22	80	3
T143.081.R	8	35	80	3
T143.100.R	10	35	80	3
T143.101.R	10	45	100	3
T143.120.R	12	35	80	3
T143.121.R	12	45	100	3
T143.122.R	12	55	100	3
T143.140.R	14	45	100	3
T143.141.R	14	55	100	3
T143.160.R	16	45	100	3
T143.161.R	16	55	100	3
T143.162.R	16	72	120	3
T143.180.R	18	55	100	3
T143.181.R	18	72	120	3
T143.182.R	18	102	150	3
T143.200.R	20	55	100	3
T143.201.R	20	72	120	3
T143.202.R	20	102	150	3
T143.250.R	25	102	150	3

Router bits with diameter from 12 mm to 25 mm,
are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=3

ART. T143

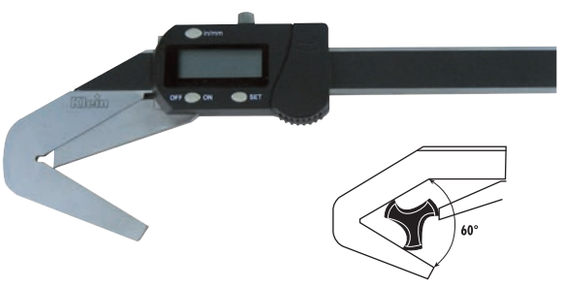


- Left-hand rotation with "DOWN CUT SPIRAL
- To be used on machining centres, CNC routers and point to point machines

LH rotation	D	B	L	Z
T143.081.L	8	35	80	3
T143.101.L	10	45	100	3
T143.120.L	12	35	85	3
T143.160.L	16	45	100	3
T143.180.L	18	55	115	3
T143.200.L	20	55	115	3
T143.201.L	20	72	130	3

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

THREE POINT DIGITAL CALIPER

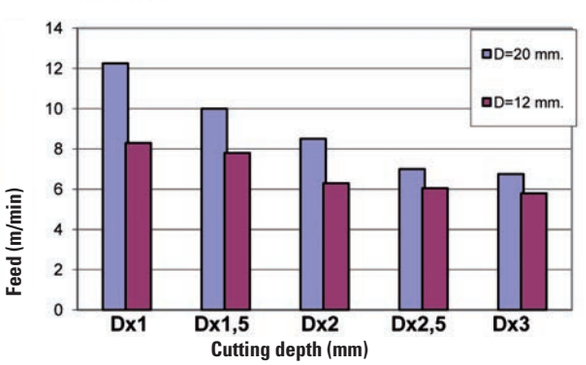


See page 15.03 for further information

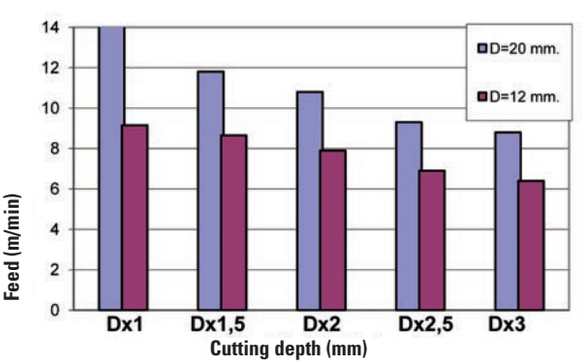
HOW TO DETERMINE THE FEEDING SPEED RELATING TO THE DIAMETER:

- Referring to item T143 with right hand rotation (UP CUT STYLE), Z=3
- RPM 18.000

Hard wood

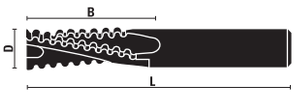


Soft wood



SOLID CARBIDE SPIRAL CUTTERS, ROUGHING STYLE Z=3

ART. T144



- **Right-hand rotation with "UP-CUT STYLE"**
- **Chip-breaker** execution
- To be used on machining centres, CNC routers and point to point machines
- Suitable for roughing, they guarantee a high feed rate

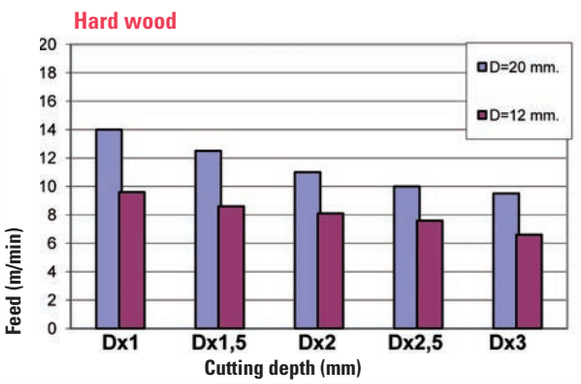
RH rotation	D	B	L	Z
T144.080.R	8	22	80	3
T144.081.R	8	35	80	3
T144.095.R NEW	3/8″	1″	3″	3
T144.100.R	10	35	80	3
T144.101.R	10	45	100	3
T144.120.R	12	35	80	3
T144.121.R	12	45	100	3
T144.122.R	12	55	100	3
T144.123.R	12	42	90	3
T144.127.R NEW	1/2″	1-1/8″	3″	3
T144.128.R NEW	1/2″	1-5/8″	3-1/2″	3
T144.140.R	14	45	100	3
T144.141.R	14	55	100	3
T144.142.R	14	58	110	3
T144.159.R NEW	5/8″	2″	4″	3
T144.160.R	16	45	100	3
T144.161.R	16	55	100	3
T144.162.R	16	72	120	3
T144.163.R	16	62	110	3
T144.180.R	18	55	100	3
T144.181.R	18	72	120	3
T144.182.R	18	102	150	3
T144.191.R NEW	3/4″	2″	4″	3
T144.200.R	20	55	100	3
T144.201.R	20	72	120	3
T144.202.R	20	102	150	3
T144.250.R	25	102	150	3

Router bits with diameter from 12 mm to 25 mm, are produced with shank for Seeger retaining rings

HOW TO DETERMINE THE FEEDING SPEED RELATING TO THE DIAMETER:

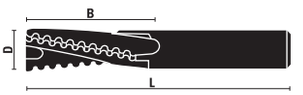
- Referring to item T144 with right hand rotation (UP CUT STYLE), Z=3
- RPM 18.000

Hard wood



SOLID CARBIDE SPIRAL CUTTERS, ROUGHING STYLE Z=3

ART. T144



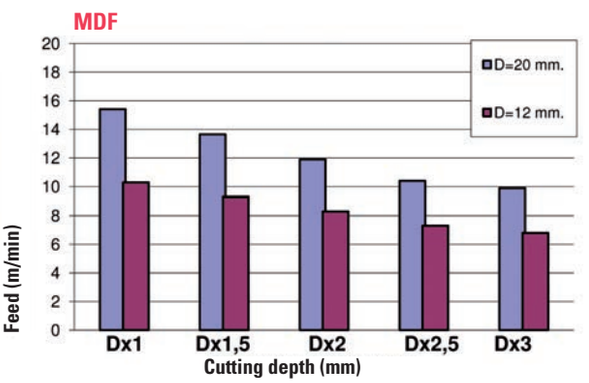
- **Left-hand rotation with "DOWN-CUT STYLE"**
- **Chip-breaker** execution
- To be used on machining centres, CNC routers and point to point machines
- Suitable for roughing, they guarantee a high feed rate

LH rotation	D	B	L	Z
T144.081.L	8	35	80	3
T144.100.L	10	35	80	3
T144.121.L	12	45	100	3
T144.122.L	12	55	105	3
T144.141.L	14	55	110	3
T144.160.L	16	45	100	3
T144.161.L	16	55	110	3
T144.162.L	16	72	125	3
T144.180.L	18	55	115	3
T144.200.L	20	55	115	3

Router bits with diameter from 12 mm to 20 mm, are produced with shank for Seeger retaining rings

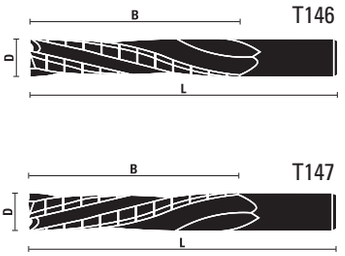
Soft wood

MDF



SOLID CARBIDE SPIRAL CUTTERS Z=3

ART. T146 - T147



- **Right-hand rotation with "UP CUT SPIRAL"** (art. T146)
- **Left-hand rotation with "UP CUT SPIRAL"** (art. T147)
- Discontinuous **cutting edge**
- To be used on machining centres, CNC routers and point to point machines

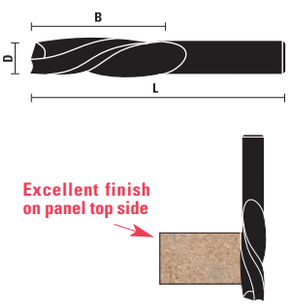
RH rotation	D	B	L	Z
T146.250.R	25	140	200	3

LH rotation	D	B	L	Z
T147.250.L	25	140	200	3

Router bits with diameter from 25 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=1

ART. T151



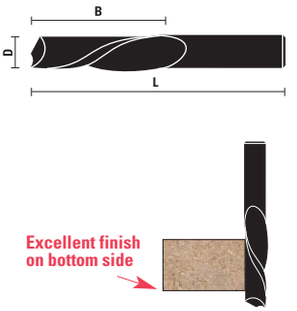
- **Right-hand rotation with "DOWN CUT SPIRAL"**
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	Z
T151.030.R	3	12	50	1
T151.040.R	4	12	50	1
T151.050.R	5	17	50	1
T151.060.R	6	17	70	1
T151.061.R	6	27	70	1
T151.080.R	8	22	80	1
T151.081.R	8	32	80	1
T151.100.R	10	32	80	1
T151.101.R	10	42	100	1
T151.120.R	12	32	90	1
T151.121.R	12	42	100	1
T151.122.R	12	52	110	1

Router bits with diameter from 12 mm to 20 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=1

ART. T151

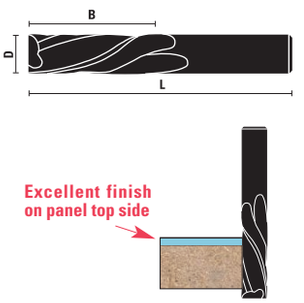


- **Left-hand rotation with "UP CUT SPIRAL"**
- To be used on machining centres, CNC routers and point to point machines

LH rotation	D	B	L	Z
T151.040.L	4	12	50	1
T151.061.L	6	27	60	1

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=2

ART. T152

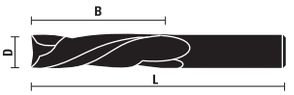


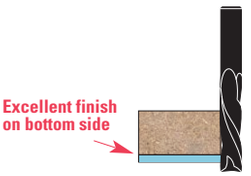
- **Right-hand rotation with "DOWN CUT SPIRAL"**
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	Z
T152.030.R	3	12	50	2
T152.032.R NEW	1/8″	1/2″	2″	2
T152.040.R	4	12	50	2
T152.048.R NEW	3/16″	3/4″	2″	2
T152.050.R	5	17	50	2
T152.060.R	6	17	70	2
T152.061.R	6	27	70	2
T152.064.R NEW	1/4″	3/4″	2″	2
T152.065.R NEW	1/4″	1-1/4″	2-1/2″	2
T152.079.R NEW	5/16″	1″	2-1/2″	2
T152.080.R	8	22	80	2
T152.081.R	8	35	80	2
T152.095.R NEW	3/8″	1-1/4″	3″	2
T152.100.R	10	35	80	2
T152.101.R	10	45	100	2
T152.110.R	11	35	80	2
T152.111.R	11	45	100	2
T152.120.R	12	35	90	2
T152.121.R	12	45	100	2
T152.122.R	12	55	110	2
T152.127.R NEW	1/2″	1-1/4″	3″	2
T152.128.R NEW	1/2″	2″	4″	2
T152.141.R	14	55	110	2
T152.160.R	16	45	100	2
T152.161.R	16	55	110	2
T152.180.R	18	55	115	2
T152.181.R	18	72	130	2
T152.200.R	20	55	115	2
T152.201.R	20	72	130	2

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=2

ART. T152





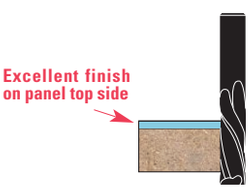
- Left-hand rotation with "UP CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

LH rotation	D	B	L	Z
T152.040.L	4	12	50	2
T152.060.L	6	17	60	2
T152.061.L	6	27	60	2
T152.080.L	8	22	80	2
T152.100.L	10	35	80	2
T152.120.L	12	35	80	2
T152.121.L	12	45	100	2
T152.141.L	14	55	110	2
T152.161.L	16	55	110	2
T152.181.L	18	72	120	2
T152.200.L	20	55	100	2
T152.201.L	20	72	120	2

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=3

ART. T153



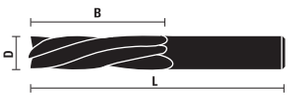
- Right-hand rotation with "DOWN CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

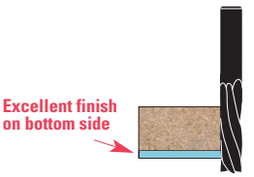
RH rotation	D	B	L	Z
T153.081.R	8	35	80	3
T153.100.R	10	35	80	3
T153.101.R	10	45	100	3
T153.120.R	12	35	85	3
T153.122.R	12	55	105	3
T153.140.R	14	45	100	3
T153.160.R	16	45	100	3
T153.161.R	16	55	110	3
T153.162.R	16	72	125	3
T153.180.R	18	55	115	3
T153.181.R	18	72	130	3
T153.200.R	20	55	115	3
T153.201.R	20	72	130	3

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=3

ART. T153





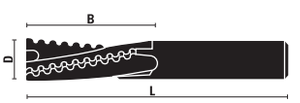
- Left-hand rotation with "UP CUT SPIRAL"
- To be used on machining centres, CNC routers and point to point machines

LH rotation	D	B	L	Z
T153.081.L	8	35	80	3
T153.100.L	10	35	80	3
T153.101.L	10	45	100	3
T153.120.L	12	35	80	3
T153.122.L	12	55	100	3
T153.140.L	14	45	100	3
T153.160.L	16	45	100	3
T153.161.L	16	55	110	3
T153.200.L	20	55	100	3
T153.201.L	20	72	120	3

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, ROUGHING STYLE Z=3

ART. T154



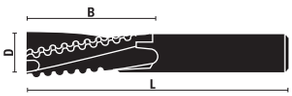
- Right-hand rotation with "DOWN CUT SPIRAL"
- **Chip-breaker** execution
- To be used on machining centres, CNC routers and point to point machines
- Suitable for roughing, they guarantee a high feed rate

RH rotation	D	B	L	Z
T154.080.R	8	22	80	3
T154.081.R	8	35	80	3
T154.095.R NEW	3/8″	1″	3″	3
T154.100.R	10	35	80	3
T154.101.R	10	45	100	3
T154.120.R	12	35	83	3
T154.121.R	12	45	100	3
T154.122.R	12	55	105	3
T154.127.R NEW	1/2″	1-1/8″	3″	3
T154.128.R NEW	1/2″	1-5/8″	3-1/2″	3
T154.140.R	14	45	100	3
T154.159.R NEW	5/8″	2″	4″	3
T154.160.R	16	45	110	3
T154.161.R	16	55	110	3
T154.162.R	16	72	125	3
T154.180.R	18	55	115	3
T154.181.R	18	72	130	3
T154.191.R NEW	3/4″	2″	4″	3
T154.200.R	20	55	115	3
T154.201.R	20	72	130	3
T154.202.R	20	102	160	3

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, ROUGHING STYLE Z=3

ART. T154

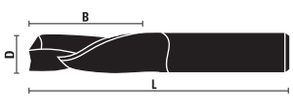


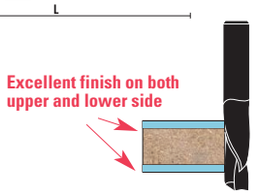
- **Left-hand rotation with "UP CUT SPIRAL"**
- **Chip-breaker** execution
- To be used on machining centres, CNC routers and point to point machines
- Suitable for roughing, they guarantee a high feed rate

LH rotation	D	B	L	Z
T154.081.L	8	35	80	3
T154.100.L	10	35	80	3
T154.120.L	12	35	80	3
T154.122.L	12	55	100	3
T154.140.L	14	45	100	3
T154.160.L	16	45	100	3
T154.161.L	16	55	110	3
T154.180.L	18	55	100	3
T154.200.L	20	55	100	3
T154.201.L	20	72	120	3
T154.250.L	25	155	220	3

SOLID CARBIDE COMPRESSION CUTTERS Z=1+1

ART. T155



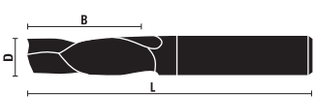


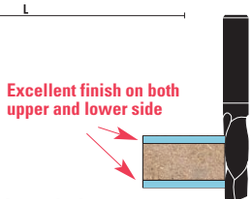
- **Right-hand rotation with double flute, compression spiral**
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	Z
T155.061.R	6	27	60	1+1
T155.080.R	8	22	80	1+1
T155.081.R	8	32	80	1+1
T155.100.R	10	32	80	1+1
T155.101.R	10	42	100	1+1
T155.120.R	12	42	100	1+1
T155.121.R	12	52	100	1+1
T155.127.R	12,7	32	78	1+1
T155.161.R	16	52	100	1+1

SOLID CARBIDE COMPRESSION CUTTERS Z=1+1

ART. T155



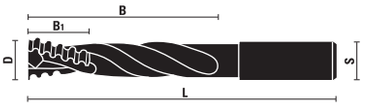


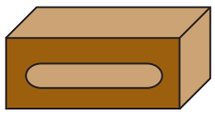
- **Left-hand rotation with double flute, compression spiral**
- To be used on machining centres, CNC routers and point to point machines

LH rotation	D	B	L	Z
T155.061.L	6	27	60	1+1
T155.081.L	8	32	80	1+1
T155.100.L	10	32	80	1+1
T155.120.L	12	42	100	1+1

SOLID CARBIDE SPIRAL CUTTERS Z=2 - Z=3

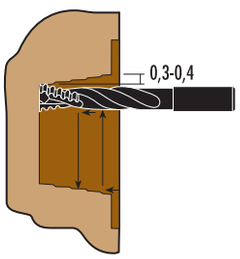
ART. T157





- **Right-hand rotation with "UP CUT SPIRAL"**
- **Chip-breaker** execution
- For locks and slot mortising

RH rotation	D	B1	B	L	S	Z
T157.140.R	14	20	95	155	14x45	2
T157.141.R	14	45	95	150	14x45	3
T157.160.R	16	25	115	175	16x45	2
T157.161.R	16	45	95	140	16x45	2
T157.162.R	16	50	100	150	16x45	3
T157.180.R	18	25	115	175	18x45	2
T157.181.R	18	50	100	150	18x45	3

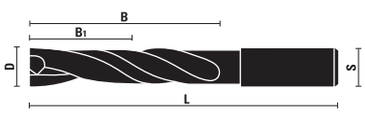


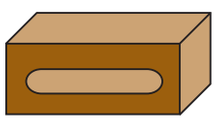
USE EXAMPLE
- Z=2/Z=3
- D= 14÷18 mm: RPM 12.000-20.000
- Stepwise processing 0,3-0,4 mm
- Can work deeply and have excellent chip evacuation

Router bits with diameter from 14 mm to 18 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS Z=3 FOR LOCKS

ART. T177 - T178





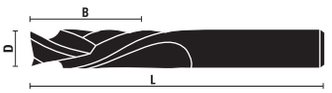
- **Without chip-breaker**
- For locks and slot mortising
- T177.160.R right rotation and right hand twist **(positive/up cut style)**
- T177.160.L left rotation and left hand twist **(positive/up cut style)**
- T178.160.R right rotation and left hand twist **(negative/down cut style)**

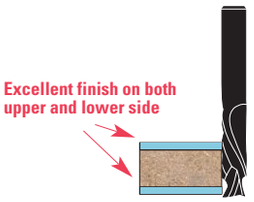
RH rotation	LH rotation	D	B1	B	L	S	Z
T177.160.R	T177.160.L	16	50	100	150	16x45	3
T178.160.R		16	50	100	150	16x45	3

Router bits with diameter from 16 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE COMPRESSION CUTTERS Z=2+2

ART. T156





- Right-hand rotation with double flute, compression spiral
- To be used on machining centres, CNC routers and point to point machines

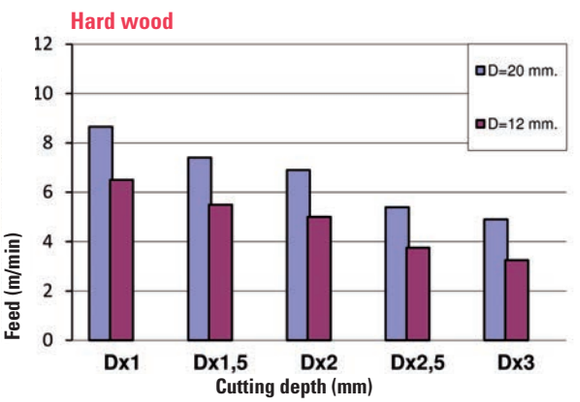
RH rotation	D	B	L	Z
T156.080.R	8	22	80	2+2
T156.081.R	8	32	80	2+2
T156.100.R	10	32	80	2+2
T156.101.R	10	42	100	2+2
T156.120.R	12	42	100	2+2
T156.121.R	12	52	110	2+2
T156.127.R	12,7	32	78	2+2
T156.140.R	14	42	100	2+2
T156.141.R	14	52	110	2+2
T156.160.R	16	42	100	2+2
T156.161.R	16	52	110	2+2
T156.162.R	16	72	130	2+2
T156.180.R	18	52	115	2+2
T156.181.R	18	72	135	2+2
T156.182.R	18	102	165	2+2
T156.200.R	20	52	115	2+2
T156.201.R	20	72	135	2+2

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

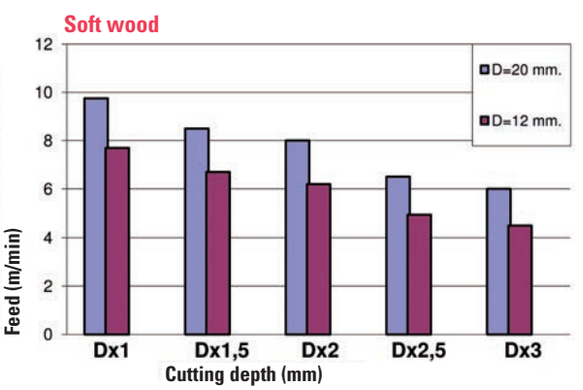
HOW TO DETERMINE THE FEEDING SPEED RELATING TO THE DIAMETER:

- Referring to item T156 with double flute, compression spiral, Z=2+2.
- RPM 18.000

Hard wood

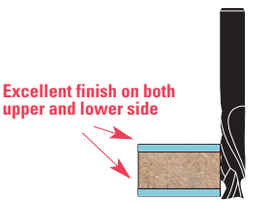


Soft wood



SOLID CARBIDE COMPRESSION CUTTERS Z=2+2

ART. T156



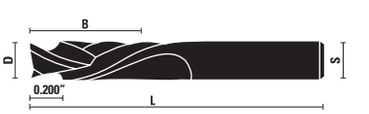
- Left-hand rotation with double flute, compression spiral
- To be used on machining centres, CNC routers and point to point machines

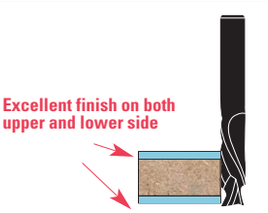
RH rotation	D	B	L	Z
T156.080.L	8	22	80	2+2
T156.081.L	8	32	80	2+2
T156.101.L	10	42	100	2+2
T156.120.L	12	42	100	2+2
T156.121.L	12	52	105	2+2
T156.161.L	16	52	110	2+2
T156.180.L	18	52	115	2+2
T156.200.L	20	52	115	2+2
T156.201.L	20	72	135	2+2

Router bits with diameter from 12 mm to 20 mm,
are produced with shank for Seeger retaining rings

SOLID CARBIDE MORTISE COMPRESSION Z=2+2

ART. T156.M



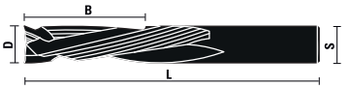


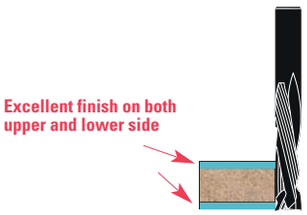
- **Right-hand rotation**
- **Excellent finish on both upper and lower side of the panel**
- These tools have a shorter up-cut section compared to standard compression bits. They are suitable for mortising, grooving, routing and dado
- For **softwood and hardwood, chipboard, MDF, HF,** double-sided melamine and laminated, plywood, plastic coated, mineral materials (CORIAN® ecc.)
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	S
T156.095.RM NEW	3/8"	7/8"	3"	3/8"
T156.096.RM NEW	3/8"	1-1/4"	3"	3/8"
T156.127.RM NEW	1/2"	7/8"	3"	1/2"
T156.128.RM NEW	1/2"	1-1/4"	3"	1/2"
T156.129.RM NEW	1/2"	1-5/8"	3-1/2"	1/2"

SOLID CARBIDE COMPRESSION CUTTERS Z=3+3

ART. T356



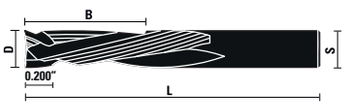


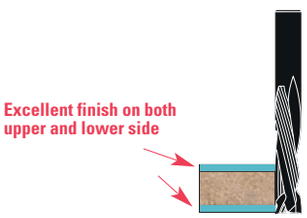
- **Right-hand rotation**
- To be used on machining centres, CNC routers and point to point machines
- **Excellent finish on both upper and lower side of the panel**
- For **softwood and hardwood, chipboard, MDF, HF**, plywood, plastic coated, mineral materials (CORIAN® ecc.)

RH rotation	D	B	L	Z
T356.080.R NEW	8	22	70	3+3
T356.100.R NEW	10	22	70	3+3
T356.101.R NEW	10	32	70	3+3
T356.120.R NEW	12	32	80	3+3
T356.121.R NEW	12	42	100	3+3
T356.160.R NEW	16	42	100	3+3
T356.161.R NEW	16	52	100	3+3

SOLID CARBIDE MORTISE COMPRESSION Z=3+3

ART. T356.M



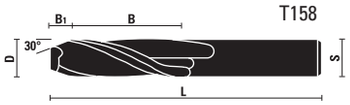


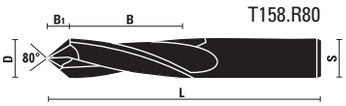
- **Right-hand rotation**
- **Excellent finish on both upper and lower side of the panel**
- These tools have a shorter up-cut section compared to standard compression bits. They are suitable for mortising, grooving, routing and dado
- For **softwood and hardwood, chipboard, MDF, HF,** double-sided melamine and laminated, plywood, plastic coated, mineral materials (CORIAN® ecc.)
- To be used on machining centres, CNC routers and point to point machines

RH rotation	D	B	L	Z
T356.095.RM NEW	3/8"	7/8"	3"	3/8"
T356.096.RM NEW	3/8"	1-1/4"	3"	3/8"
T356.127.RM NEW	1/2"	7/8"	3"	1/2"
T356.128.RM NEW	1/2"	1-1/4"	3"	1/2"

SOLID CARBIDE SPIRAL CUTTERS Z=2

ART. T158





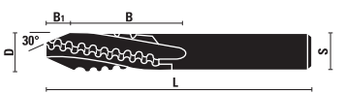
- **Right-hand rotation with "UP CUT SPIRAL"**
- For spy holes
- For boring and routing

RH rotation	D	B1	B	L	S	Z
T158.140.R	14	8	42	100	14	2
T158.160.R	16	9	52	120	16	2
T158.180.R	18	10	52	120	18	2
T158.200.R	20	11	52	120	20	2
T158.080.R80	8	4,8	38	80	8	2
T158.100.R80	10	6	46	100	10	2
T158.120.R80	12	7,2	50	110	12	2
T158.160.R80	16	9,6	52	120	16	2

Router bits with diameter from 12 mm to 20 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS Z=2

ART. T159



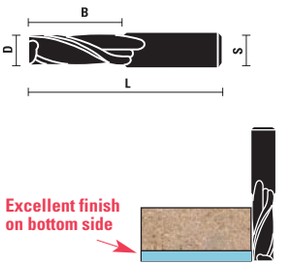
- **Right-hand rotation with "UP CUT SPIRAL"**
- **Chip-breaker** execution
- For spyholes on doors
- Thrugh holes cutting

RH rotation	D	B1	B	L	S	Z
T159.160.R	16	9	52	120	16	2
T159.200.R	20	11	52	120	20	2

Router bits with diameter from 16 mm to 20 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE S=6 Z=2

ART. T160

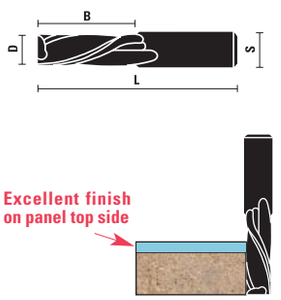


- Can also be used on portable routers
- **Right-hand rotation with "UP CUT SPIRAL"**

RH rotation	D	B	L	S	Z
T160.030.R	3	12	60	6	2
T160.035.R	3,5	14	60	6	2
T160.040.R	4	14	60	6	2
T160.045.R	4,5	16	60	6	2
T160.050.R	5	17	60	6	2

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE S=6 Z=2

ART. T161



- Can also be used on portable routers
- **Right-hand rotation with "DOWN CUT SPIRAL"**

Rotaz. DX	D	B	L	S	Z
T161.030.R	3	12	60	6	2
T161.035.R	3,5	14	60	6	2
T161.040.R	4	14	60	6	2
T161.045.R	4,5	16	60	6	2
T161.050.R	5	17	60	6	2

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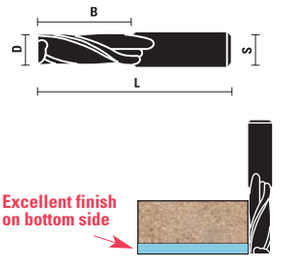
SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE S=8 Z=2

ART. T162

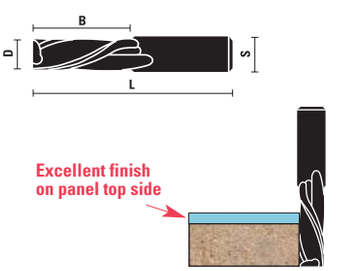


- Can also be used on portable routers
- **Right-hand rotation with "UP CUT SPIRAL"**

RH rotation	D	B	L	S	Z
T162.030.R	3	12	60	8	2
T162.040.R	4	14	60	8	2
T162.050.R	5	17	60	8	2
T162.060.R	6	22	70	8	2
T162.070.R	7	32	80	8	2

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE S=8 Z=2

ART. T163

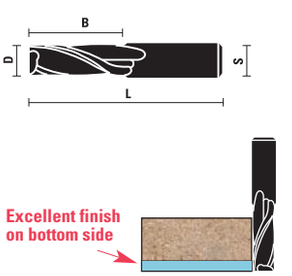


- Can also be used on portable routers
- **Right-hand rotation with "DOWN CUT SPIRAL"**

RH rotation	D	B	L	S	Z
T163.030.R	3	12	60	8	2
T163.040.R	4	14	60	8	2
T163.050.R	5	17	60	8	2
T163.060.R	6	22	70	8	2
T163.070.R	7	32	80	8	2

SOLID CARBIDE SPIRAL CUTTERS, FINISH STYLE Z=2

ART. T164

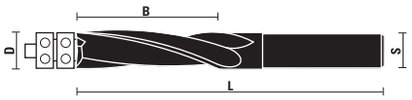


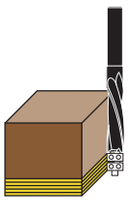
- Can also be used on portable routers
- **Right-hand rotation with "UP CUT SPIRAL"**

RH rotation	D	B	L	S	Z
T164.032.R NEW	1/8″	1/2″	2″	1/4″	2
T164.048.R NEW	3/16″	3/4″	2″	1/4″	2

HW FLUSH TRIM BITS WITH DOUBLE BALL BEARINGS Z=2

ART. T168





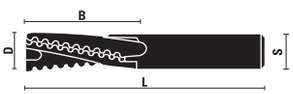
- Right-hand rotation with **"UP CUT SPIRAL"**
- Double ball bearings guide for **greater precision of trimming**
- Special spiral geometry which provides **better chip evacuation and smoother cuts** compared to standard flush trim bits
- For natural wood, pressed wood, veneered, laminate and melamine

RH rotation	D	B	L	S	Z
T168.127.R NEW	12,7 (1/2")	51	125	12	2

Z050.007.N

SOLID CARBIDE SPIRAL CUTTERS, ROUGHING STYLE Z=2

ART. T170



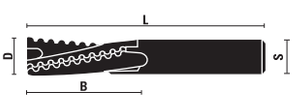
- **Right-hand rotation with "UP CUT SPIRAL"**
- **Chip-breaker** execution
- Z= 2 for the best chip removal

RH rotation	D	B	L	S	Z
T170.080.R	8	35	80	8	2
T170.100.R	10	35	80	10	2
T170.120.R	12	35	80	12	2
T170.121.R	12	45	90	12	2

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL CUTTERS, ROUGHING STYLE Z=2

ART. T171



- **Right-hand rotation with "DOWN CUT SPIRAL"**
- **Chip-breaker** execution
- Z= 2 for the best chip removal

RH rotation	D	B	L	S	Z
T171.080.R	8	35	80	8	2
T171.100.R	10	35	80	10	2
T171.120.R	12	35	80	12	2

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE TAPERED BALL NOSE SPIRAL BITS Z=3

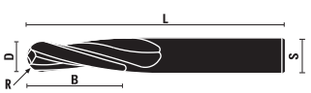
ART. T173

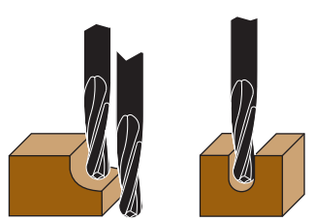
- **Right-hand rotation with "UP CUT SPIRAL"**
- Specially designed for smooth 2D and 3D carving in plastic, aluminium and wood
- Use on CNC and high speed machines

RH rotation	D	B	L	R	S
T173.008.R NEW	1/32"	1"	3"	1/64"	1/4"
T173.009.R NEW	0,8	25	70	0,4	6
T173.016.R NEW	1/16"	1"	3"	1/32"	1/4"
T173.017.R NEW	1,6	25	70	0,8	6
T173.018.R NEW	1,6	30	80	0,8	8
T173.031.R NEW	1/8"	1"	3"	1/16"	1/4"
T173.032.R NEW	1/8"	2-1/2"	4"	1/16"	1/2"
T173.033.R NEW	3,17	30	70	1,59	6
T173.034.R NEW	3,17	50	90	1,59	8
T173.064.R NEW	1/4"	2"	4"	1/8"	1/2"

SOLID CARBIDE SPIRAL CUTTERS RADIUS STYLE Z=2

ART. T175





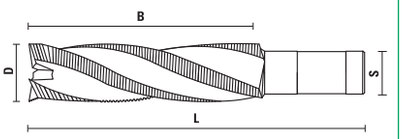
- Suitable for working plastic materials
- **Right-hand rotation with "UP CUT SPIRAL"**

RH rotation	D	R	B	L	Z
T175.030.R	3	1,5	12	50	2
T175.040.R	4	2	12	50	2
T175.060.R	6	3	22	60	2
T175.080.R	8	4	22	80	2
T175.100.R	10	5	35	80	2
T175.120.R	12	6	35	80	2
T175.160.R	16	8	55	100	2
T175.180.R	18	9	55	110	2
T175.200.R	20	10	55	110	2

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

HS ROUTER BITS FOR "HUNDEGGER" MACHINES

ART. T244

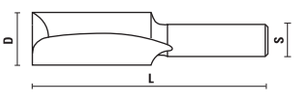


- **Chip-breaker** execution
- For machining lamellar beams

RH rotation	D	B	L	S	Z
T244.400.R	40	165	235	30	3
T244.500.R	50	215	295	30	3

HS CARVING BITS, PLANE STYLE

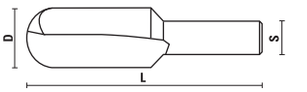
ART. T213 - T214



RH rotation	LH rotation	D	L	S	Z
T213.020.R	T213.020.L	2	90	11x50	1
T213.040.R	T213.040.L	4	90	11x50	1
T213.060.R	T213.060.L	6	90	11x50	1
T213.080.R	T213.080.L	8	90	11x50	1
T213.100.R	T213.100.L	10	90	11x50	1
T213.120.R	T213.120.L	12	90	11x50	1
T213.140.R	T213.140.L	14	90	11x50	1
T213.160.R	T213.160.L	16	90	11x50	1
T214.100.R	T214.100.L	10	90	11x50	2
T214.120.R	T214.120.L	12	90	11x50	2
T214.140.R	T214.140.L	14	90	11x50	2
T214.160.R	T214.160.L	16	90	11x50	2
T214.180.R	T214.180.L	18	90	11x50	2
T214.200.R	T214.200.L	20	90	11x50	2
T214.220.R	T214.220.L	22	90	11x50	2
T214.240.R	T214.240.L	24	90	11x50	2

HS CARVING BITS, ROUND STYLE

ART. T215 - T216



RH rotation	LH rotation	D	L	S	Z
T215.020.R	T215.020.L	2	90	11x50	1
T215.040.R	T215.040.L	4	90	11x50	1
T215.060.R	T215.060.L	6	90	11x50	1
T215.080.R	T215.080.L	8	90	11x50	1
T215.100.R	T215.100.L	10	90	11x50	1
T215.120.R	T215.120.L	12	90	11x50	1
T215.140.R	T215.140.L	14	90	11x50	1
T215.160.R	T215.160.L	16	90	11x50	1
T216.100.R	T216.100.L	10	90	11x50	2
T216.120.R	T216.120.L	12	90	11x50	2
T216.140.R	T216.140.L	14	90	11x50	2
T216.160.R	T216.160.L	16	90	11x50	2
T216.180.R	T216.180.L	18	90	11x50	2
T216.200.R	T216.200.L	20	90	11x50	2
T216.220.R	T216.220.L	22	90	11x50	2
T216.240.R	T216.240.L	24	90	11x50	2

KleinDIA

A surface treatment developed for large-scale production

KleinDIA is a DLC (**Diamond-like Carbon**) anti-friction coating which allows to solve problems of tool abrasion, chip evacuation and chemical attack.
A layer of apprx. 1 micron is laid on the tool surface at low temperature, thus not altering the properties of the router bit or knife.
Its high hardness is granted by both Sp2 (**Graphite**) and Sp3 (**Diamond**) carbon hybridisation.
Our several tests confirmed remarkable results on both panel working and solid wood processing.
Working plastic and aluminium without coolant is also possible thanks to a very low friction coefficient.

TECHNICAL FEATURES:
- **High hardness** Hv0,025: 2500-3100
- **Higher wear resistance** (longer working time)
- **Low frictional coefficient** (lowered working temperature)
- **Very low sticking coefficient** (Better chips evacuation)
- **Thickness**: apprx. 1 micron
- **Colour**: bright black

KleinDIA is the most advantageous coating, ensuring:
- **Production increase**
- **Better finishing**
- **Less maintenance**

The surface coating **KleinDIA** can be applied on many other products giving extraordinary results depending on the type of material processed.
Excellent results can be achieved processing solid wood, plywood, Plexiglas, plastic and graphitic materials.

HERE ARE SOME OF THE ITEMS WHICH ARE SUITABLE TO BE COATED WITH KleinDIA:

Solid carbide straight router bits
ART. A101/2/3 - C101/2/3 - C190 - D101/2

Page **1.07, 1.23, 2.05**

Solid carbide spiral router bits
ART. T141/2/3 - T151/2/3 - T157/8/9

Page from **7.36** to **7.52, 7.54**

Solid carbide dowel drills
ART. L116 - L117

Pag. **5.11**

Solid carbide through-hole boring bits
ART. L134 - L135

Pag. **5.17**

HW reversible knives
ART. ZB

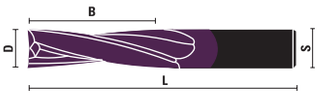
Pag. **11.10**

HS planer knives
ART. ZC 30 - ZC 35

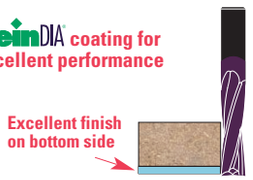
Pag. **11.11, 11.12, 11.13**

SOLID CARBIDE SPIRAL CUTTERS FINISH STYLE Z=2, KleinDIA COATED

ART. T142.KD



KleinDIA coating for excellent performance

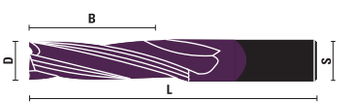


- Right-hand rotation with **"UP CUT SPIRAL"**
- **Polished and coated cutting edge for improved chip evacuation and less friction for excellent performance**
- **Longer tool life and greater cutting quality**
- To be used on machining centres, CNC routers and point to point machines
- For **softwood and hardwood, chipboard, MDF, HF**, plywood, plastic coated, mineral materials (CORIAN® ecc.)

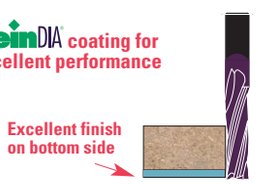
RH rotation	D	B	L	Z
T142.030.RKD NEW	3	12	50	2
T142.040.RKD NEW	4	12	50	2
T142.050.RKD NEW	5	17	50	2
T142.060.RKD NEW	6	17	60	2
T142.061.RKD NEW	6	27	60	2
T142.080.RKD NEW	8	22	80	2
T142.081.RKD NEW	8	35	80	2
T142.100.RKD NEW	10	35	80	2
T142.101.RKD NEW	10	45	100	2
T142.121.RKD NEW	12	45	100	2

SOLID CARBIDE SPIRAL CUTTERS FINISH STYLE Z=3, KleinDIA COATED

ART. T143.KD



KleinDIA coating for excellent performance

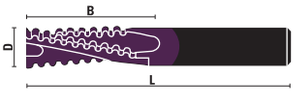


- Right-hand rotation with **"UP CUT SPIRAL"**
- **Polished and coated cutting edge for improved chip evacuation and less friction for excellent performance**
- **Longer tool life and greater cutting quality**
- To be used on machining centres, CNC routers and point to point machines
- For **softwood and hardwood, chipboard, MDF, HF,** plywood, plastic coated, mineral materials (CORIAN® ecc.)

RH rotation	D	B	L	Z
T143.081.RKD NEW	8	35	80	3
T143.100.RKD NEW	10	35	80	3
T143.101.RKD NEW	10	45	100	3
T143.121.RKD NEW	12	45	100	3

SOLID CARBIDE SPIRAL CUTTERS ROUGHING STYLE Z=3, KleinDIA COATED

ART. T144.KD



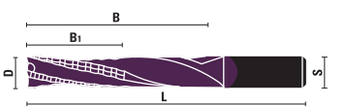
KleinDIA coating for excellent performance

- Right-hand rotation with **"UP CUT SPIRAL"**
- **Polished and coated cutting edge for improved chip evacuation and less friction for excellent performance**
- **Chip-breaker** execution
- **Longer tool life and greater cutting quality**
- To be used on machining centres, CNC routers and point to point machines
- Suitable for roughing, they guarantee a high feed rate

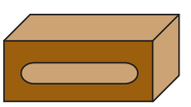
RH rotation	D	B	L	Z
T144.081.RKD NEW	8	35	80	3
T144.100.RKD NEW	10	35	80	3
T144.101.RKD NEW	10	45	100	3
T144.121.RKD NEW	12	45	100	3
T144.161.RKD NEW	16	55	100	3

SOLID CARBIDE SPIRAL CUTTERS FPR LOCK-CASE Z=3, KleinDIA COATED

ART. T357.KD



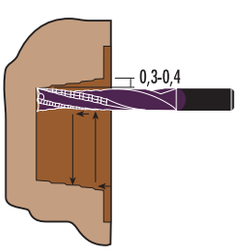
KleinDIA coating for excellent performance



- Right-hand rotation with **"UP CUT SPIRAL"**
- **Semifinished chip-breaker execution** (roughing and finishing) as our items T344 - T354 at page 7.60 of our Catalog 14.A
- For locks and slot mortising
- **Polished and coated cutting edge for improved chip evacuation and less friction for excellent performance**
- To be used on machining centres, CNC routers and point to point machines
- For **softwood and hardwood, chipboard, MDF, HF**, plywood, plastic coated, mineral materials (**CORIAN**® ecc.)

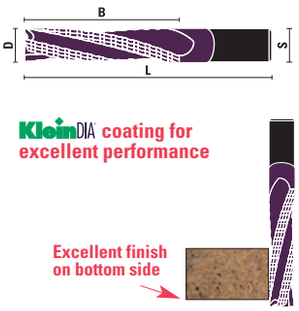
RH rotation	D	B1	B	L	S	Z
T357.162.RKD NEW	16	45	100	150	16x45	3

USE EXAMPLE
- Stepwise processing 0,3-0,4 mm
- Can work deeply and have excellent chip evacuation



SOLID CARBIDE SPIRAL ROUTER BITS FINISH/ROUGHING STYLE

ART. T344



- **Right-hand rotation with "UP CUT SPIRAL"**
- To be used on machining centres, CNC routers and point to point machines
- Semi-finished chip-breaker execution
- For **softwood and hardwood**, **chipboard**, **MDF**, **HF**, plywood, plastic coated, mineral materials (**CORIAN®** ecc.)

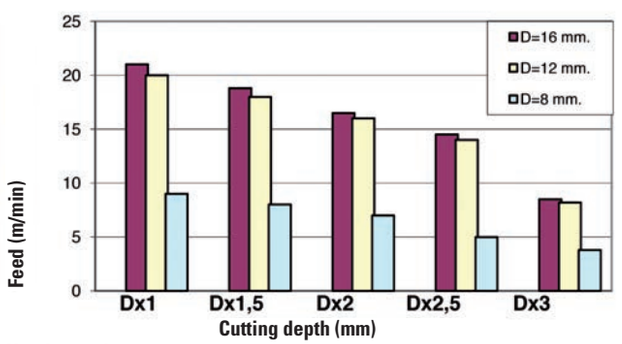
RH rotation	D	B	L	Z
T344.080.RKD	8	30	80	2
T344.100.RKD	10	35	80	2
T344.120.RKD	12	35	80	3
T344.121.RKD	12	45	90	3
T344.140.RKD	14	55	110	3
T344.160.RKD	16	55	110	3
T344.161.RKD	16	75	130	3
T344.200.RKD	20	55	110	3
T344.201.RKD	20	75	130	3

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

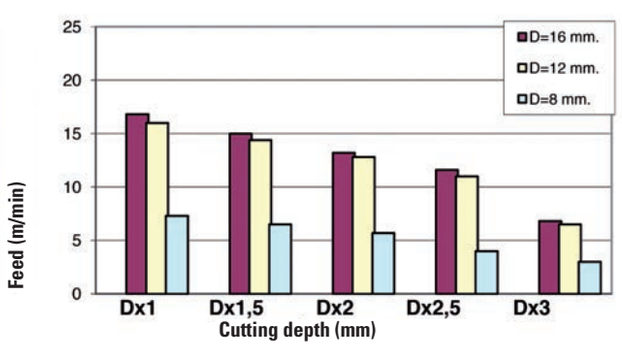
HOW TO DETERMINE THE FEEDING SPEED RELATING TO THE DIAMETER:

- Referring to item T344RKD with right hand rotation (UP CUT STYLE), Z=2/3
- Referring to item T354RKD with right hand rotation (DOWN CUT STYLE), Z=2/3
- Referring to item T354LKD with left hand rotation (UP CUT STYLE), Z=2/3
- RPM 18.000

Soft wood

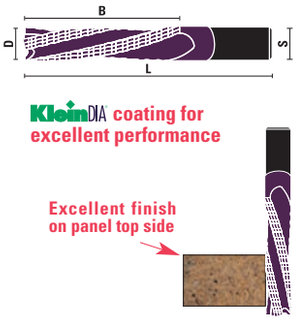


Hard wood



SOLID CARBIDE SPIRAL ROUTER BITS FINISH/ROUGHING STYLE

ART. T354.KD



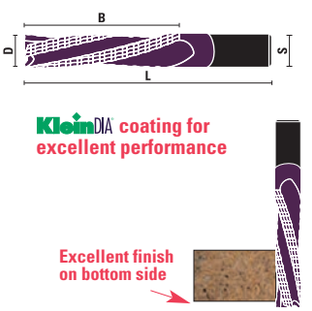
- **Right-hand rotation with "DOWN CUT SPIRAL"**
- To be used on machining centres, CNC routers and point to point machines
- Semi-finished chip-breaker execution
- For **softwood and hardwood**, **chipboard**, **MDF**, **HF**, plywood, plastic coated, mineral materials (**CORIAN®** ecc.)

RH rotation	D	B	L	Z
T354.100.RKD	10	35	80	2
T354.120.RKD	12	35	80	3
T354.160.RKD	16	55	110	3
T354.161.RKD	16	75	130	3
T354.200.RKD	20	55	110	3

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

SOLID CARBIDE SPIRAL ROUTER BITS FINISH/ROUGHING STYLE

ART. T354.KD



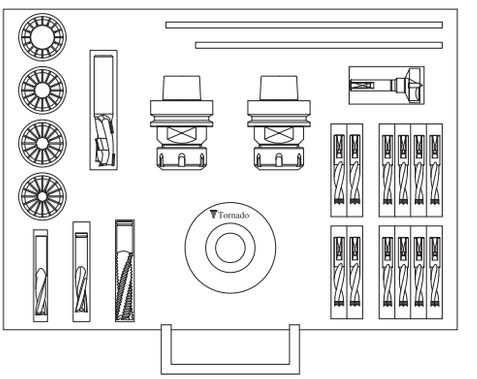
- **Left-hand rotation with "UP CUT SPIRAL"**
- To be used on machining centres, CNC routers and point to point machines
- Semi-finished chip-breaker execution
- For **softwood and hardwood**, **chipboard**, **MDF**, **HF**, plywood, plastic coated, mineral materials (**CORIAN®** ecc.)

LH rotation	D	B	L	Z
T354.100.LKD	10	35	80	2
T354.120.LKD	12	35	80	3
T354.160.LKD	16	55	110	3
T354.161.LKD	16	75	130	3
T354.200.LKD	20	55	110	3

Router bits with diameter from 12 mm, are produced with shank for Seeger retaining rings

TOOL KIT FOR CNC ROUTERS

ART. X118



HSK63F for ER 32 spring collets

Item

X118.001.N NEW

Complete with:

- **T118.976.R - nr. 2**
  Collet chucks HSK63F for ER 32
- **T119.080.R - nr. 1 - D=8**
  T119.120.R - nr. 1 - D=12
  T119.160.R - nr. 1 - D=16
  T119.200.R - nr. 1 - D=20
  Spring collet - ER 32 - DIN 6499
- **T144.161.R - nr. 1 - D=16**
  Solid carbide spiral cutters, roughing style Z=3
- **T142.081.R - nr. 1 - D=8**
  T142.120.R - nr. 1 - D=12
  Solid carbide spiral cutters, finish style Z=2
- **X502.203.R - nr. 1 - D=20**
  DP router bits
- **Z052.401.N - nr. 1**
  Wrenches for collet nut "standard" ER 32
- **Z052.315.N - nr. 1**
  Hook wrench 95/100 for art. T139.501.RK Tornado®
- **L115.050.R - nr. 4 - D=5x70**
  L115.050.L - nr. 4 - D=5x70
  L115.080.R - nr. 2 - D=8x70
  L115.080.L - nr. 2 - D=8x70
  HW dowel drills extra time Z=2
- **L141.350.R - nr. 1 - D=35**
  HW hinge boring bits Z=2+2
- **T139.501.RK - nr. 1**
  Dust & chip extraction nut type ER 32 - DIN6499 Tornado®

HSK63F for ER 40 spring collets

Item

X118.002.N NEW

Complete with:

- **T118.980.R - nr. 2**
  Collet chucks HSK63F for ER 40
- **T123.080.R - nr. 1 - D=8**
  T123.120.R - nr. 1 - D=12
  T123.160.R - nr. 1 - D=16
  T123.200.R - nr. 1 - D=20
  Spring collet ER 40 - DIN 6499
- **T144.161.R - nr. 1 - D=16**
  Solid carbide spiral cutters, roughing style Z=3
- **T142.081.R - nr. 1 - D=8**
  T142.120.R - nr. 1 - D=12
  Solid carbide spiral cutters, finish style Z=2
- **X502.203.R - nr. 1 - D=20**
  DP router bits
- **Z052.402.N - nr. 1**
  Wrenches for collet nut "standard" ER 40
- **Z052.315.N - nr. 1**
  Hook wrench 95/100 for art. T139.502.RK Tornado®
- **L115.050.R - nr. 4 - D=5x70**
  L115.050.L - nr. 4 - D=5x70
  L115.080.R - nr. 2 - D=8x70
  L115.080.L - nr. 2 - D=8x70
  HW dowel drills extra time Z=2
- **L141.350.R - nr. 1 - D=35**
  HW hinge boring bits Z=2+2
- **T139.502.RK - nr. 1**
  Dust & chip extraction nut type ER 40 - DIN6499 Tornado®

HSK63F for EOC25 spring collets

Item

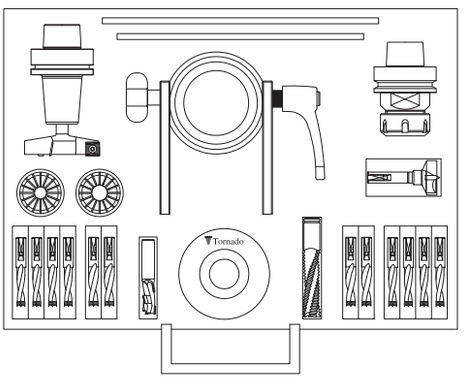
X118.003.N NEW

Complete with:

- **T118.984.R - nr. 2**
  Collet chucks HSK63F for EOC25 with ball bearing
- **T124.080.R - nr. 1 - D=8**
  T124.120.R - nr. 1 - D=12
  T124.160.R - nr. 1 - D=16
  T124.200.R - nr. 1 - D=20
  Spring collet EOC25 - DIN 6388
- **T144.161.R - nr. 1 - D=16**
  Solid carbide spiral cutters, roughing style Z=3
- **T142.081.R - nr. 1 - D=8**
  T142.120.R - nr. 1 - D=12
  Solid carbide spiral cutters, finish style Z=2
- **X502.203.R - nr. 1 - D=20**
  DP router bits
- **Z052.310.N - nr. 1** (58/62)
  Wrenches for collet nut EOC25/DIN6388
- **Z052.315.N - nr. 1**
  Hook wrench 95/100 for art. T139.522.RK Tornado®
- **L115.050.R - nr. 4 - D=5x70**
  L115.050.L - nr. 4 - D=5x70
  L115.080.R - nr. 2 - D=8x70
  L115.080.L - nr. 2 - D=8x70
  HW dowel drills extra time Z=2
- **L141.350.R - nr. 1 - D=35**
  HW hinge boring bits Z=2+2
- **T139.522.RK - nr. 1**
  Dust & chip extraction nut type EOC25- DIN6388 Tornado®

TOOL KIT FOR CNC ROUTERS

ART. X118



HSK63F for ER 32 spring collets

Item

X118.011.N **NEW**

Complete with:

- **T118.976.R - nr. 1**
  Collet chucks HSK63F for ER 32
- **T119.120.R - nr. 1 - D=12**
  T119.160.R - nr. 1 - D=16
  Spring collet ER 32 - DIN 6499
- **T144.161.R - nr. 1 - D=16**
  Solid carbide spiral cutters, roughing style Z=3
- **X500.120.R - nr. 1 - D=12**
  DP router bits
- **WE190.800.R - nr. 1 - D=80**
  Frese con coltellini HW per spianare Z=3
- **T120.620.R - nr. 1 - D=12**
  Shrink fit chucks HSK63F
- **Z052.401.N - nr. 1**
  Chiavi per ghiere tipo standard ER 32
- **Z052.315.N - nr. 1**
  Chiavi a settore 95/100 per art. T139.501.RK Tornado®
- **L115.050.R - nr. 4 - D=5x70**
  L115.050.L - nr. 4 - D=5x70
  L115.080.R - nr. 2 - D=8x70
  L115.080.L - nr. 2 - D=8x70
  HW dowel drills extra time Z=2
- **L141.350.R - nr. 1 - D=35**
  HW hinge boring bits Z=2+2
- **T139.163.N - nr. 1**
  Adjustable demount devices
- **T139.501.RK - nr. 1**
  Dust & chip extraction nut type ER 32 - DIN6499 Tornado®

HSK63F for ER 40 spring collets

Item

X118.012.N **NEW**

Complete with:

- **T118.980.R - nr. 1**
  Collet chucks HSK63F for ER 40
- **T123.120.R - nr. 1 - D=12**
  T123.160.R - nr. 1 - D=16
  Spring collet ER 40 - DIN 6499
- **T144.161.R - nr. 1 - D=16**
  Solid carbide spiral cutters, roughing style Z=3
- **X500.120.R - nr. 1 - D=12**
  DP router bits
- **WE190.800.R - nr. 1 - D=80**
  Frese con coltellini HW per spianare Z=3
- **T120.620.R - nr. 1 - D=12**
  Shrink fit chucks HSK63F
- **Z052.402.N - nr. 1**
  Chiavi per ghiere tipo standard ER 40
- **Z052.315.N - nr. 1**
  Chiavi a settore 95/100 per art. T139.502.RK Tornado®
- **L115.050.R - nr. 4 - D=5x70**
  L115.050.L - nr. 4 - D=5x70
  L115.080.R - nr. 2 - D=8x70
  L115.080.L - nr. 2 - D=8x70
  HW dowel drills extra time Z=2
- **L141.350.R - nr. 1 - D=35**
  HW hinge boring bits Z=2+2
- **T139.163.N - nr. 1**
  Adjustable demount devices
- **T139.502.RK - nr. 1**
  Dust & chip extraction nut type ER 40 - DIN6499 Tornado®

HSK63F for EOC25 spring collets

Item

X118.013.N **NEW**

Complete with:

- **T118.984.R - nr. 1**
  Collet chucks HSK63F for EOC25 with ball bearing
- **T124.120.R - nr. 1 - D=12**
  T124.160.R - nr. 1 - D=16
  Spring collet EOC25 - DIN 6388
- **T144.161.R - nr. 1 - D=16**
  Solid carbide spiral cutters, roughing style Z=3
- **X500.120.R - nr. 1 - D=12**
  DP router bits
- **WE190.800.R - nr. 1 - D=80**
  Frese con coltellini HW per spianare Z=3
- **T120.620.R - nr. 1 - D=12**
  Shrink fit chucks HSK63F
- **Z052.310.N - nr. 1** (58/62)
  Chiavi a settore per ghiere EOC25/DIN6388
- **Z052.315.N - nr. 1**
  Chiavi a settore 95/100 per art. T139.522.RK Tornado®
- **L115.050.R - nr. 4 - D=5x70**
  L115.050.L - nr. 4 - D=5x70
  L115.080.R - nr. 2 - D=8x70
  L115.080.L - nr. 2 - D=8x70
  HW dowel drills extra time Z=2
- **L141.350.R - nr. 1 - D=35**
  HW hinge boring bits Z=2+2
- **T139.163.N - nr. 1**
  Adjustable demount devices
- **T139.522.RK - nr. 1**
  Dust & chip extraction nut type EOC25 - DIN6388 Tornado®

MODULAR DRAWER UNIT

Drawer unit

"Elegant, sturdy Klein drawer unit with an innovative, modern design and great modularity, where you can keep all your Klein tools in a clean, secure, well-organized place. Say good-bye to messiness and damaged tools. Now, with the new Klein drawer unit, you can put your storeroom in order in a convenient, functional way.

SMALL OUTSIDE BUT LARGE INSIDE
the Klein drawer unit takes up little space but can contain countless articles in its 10 drawers and 80 containers (8 containers per drawer).

- **STURDY**
  since each drawer can hold around 8 kg.
- **LIGHT**
  since it's made of a high-strength polypropylene co-polymer.
- **SECURE**
  since each drawer has its own key.
- **PRACTICAL**
  since it can be equipped with 4 casters for convenient movement or with slip-resistant feet.
- **CONVENIENT**
  since it features a wooden top which acts as a practical surface for taking notes or keeping tools.
- **VERSATILE**
  since the tubs in the drawers can be removed easily as desired.

Whether it's placed next to a CNC router, or close to a point-to-point boring machine, along the panel production line or in any carpentry shop, the new Klein drawer unit can be a real help in keeping the tools you use every day in perfect order and in good condition.

The new Klein drawer unit can hold a wide range of tools.
Ask our customer service how to receive it.

Modular drawer unit "CNC"

Ideal to store collet chucks, spring collets and spiral router bits beside your CNC machine

1st Drawer	2nd Drawer	3rd Drawer	4th Drawer	5th Drawer
Spring collets ER32	*Spring collets ER40*	*Collet chucks and spring collets ER25*	*Spiral router bits Z=2*	*Spiral router bits Z=3*
Art. T119.060.N	Art. T123.080.N	Art. T118.700.R	Art. T142.040.R	Art. T143.081.R
T119.080.N	T123.100.N	T118.800.R	T142.050.R	T143.100.R
T119.100.N	T123.120.N	T118.976.R	T142.061.R	T143.101.R
T119.120.N	T123.140.N	T118.980.R	T142.080.R	T143.121.R
T119.140.N	T123.160.N	T125.060.N	T142.081.R	T143.161.R
T119.160.N	T123.180.N	T125.080.N	T142.100.R	T143.180.R
T119.180.N	T123.200.N	T125.100.N	T142.101.R	T143.200.R
T119.200.N	T123.250.N	T125.120.N	T142.121.R	T143.201.R

6th Drawer	7th Drawer	8th Drawer	9th Drawer	10th Drawer
Spiral router bits Z=3 + chipbreaker	*Spiral router bits Z=1*	*Spiral router bits Z=2 down-cut*	*Spiral router bits for locks*	*Straight cut router bits*
Art. T144.081.R	Art. T141.030.R	Art. T152.030.R	Art. T153.100.R	Art. D101.080.R
T144.100.R	T141.040.R	T152.040.R	T153.120.R	D101.100.R
T144.101.R	T141.050.R	T152.050.R	T153.160.R	D102.100.R
T144.121.R	T141.061.R	T152.061.R	T154.081.R	D103.121.R
T144.161.R	T141.081.R	T152.080.R	T154.120.R	D103.141.R
T144.180.R	T141.100.R	T152.081.R	T154.160.R	D103.161.R
T144.200.R	T151.061.R	T152.101.R	T157.140.R	D103.181.R
T144.201.R	T151.081.R	T152.121.R	T157.162.R	D103.201.R