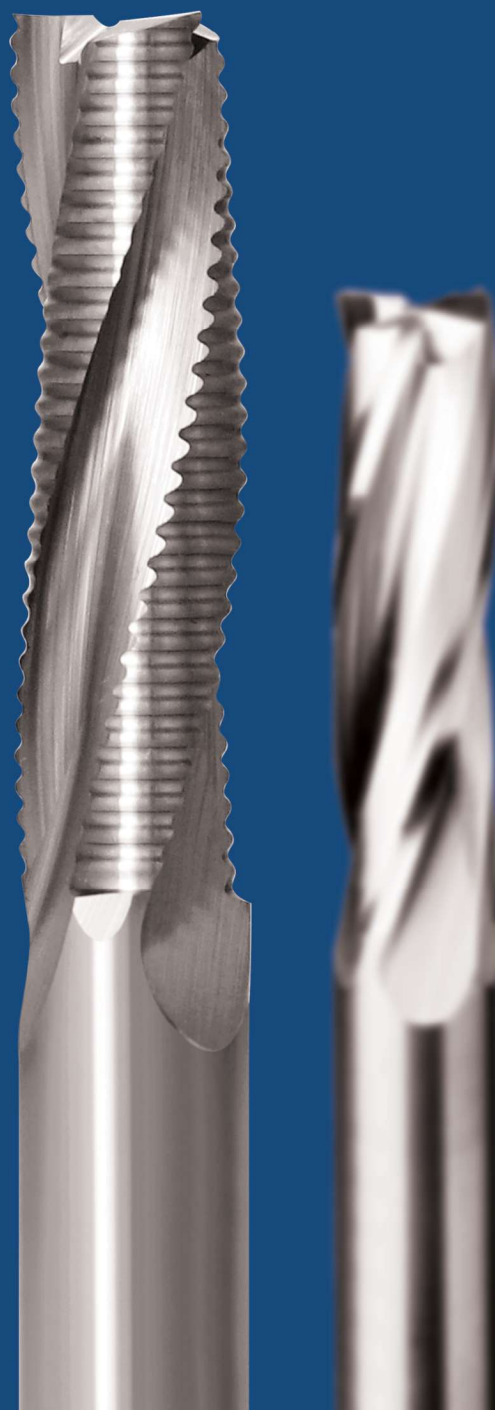




# SOLID CARBIDE SPIRAL BITS



## Solid Carbide Finishing Upcut Spiral Bits Z1

Yüzey Frezesi Yonde Yukari Kesim Z1  
Brocas helicoidales Z1 - corte ascendente

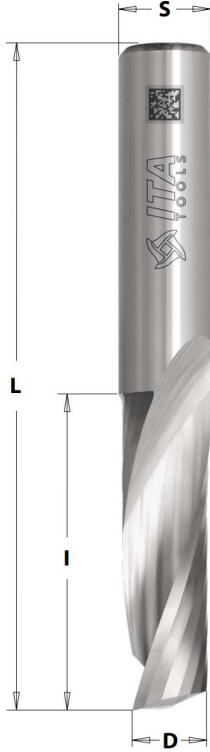


**198**  
positive

**VHM**

**Z1**

**RH**



### TECHNICAL DETAILS:

- 1 spiral cutting edge
- Upward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.  
Use a high feed speed on well-clamped workpieces.  
Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE
3	12	50	3	198.03.012.050.03R
4	15	50	4	198.04.015.050.04R
5	17	50	5	198.05.017.050.05R
6	22	60	6	198.06.022.060.06R
8	22	70	8	198.08.022.070.08R
10	32	70	10	198.10.032.070.10R
10	42	80	10	198.10.042.080.10R
10	52	90	10	198.10.052.090.10R
12	32	83	12	198.12.032.083.12R

D inch	I inch	L inch	S inch	ARTICLE
1/8	1/2	2	1/4	198.32.127.508.64R
3/16	5/8	2	1/4	198.48.159.508.64R
1/4	3/4	2	1/4	198.64.191.508.64R
1/4	1	2-1/2	1/4	198.64.254.635.64R
3/8	1-1/8	3	3/8	198.95.286.762.95R



Other dimensions  
are available on order



## Solid Carbide Finishing Upcut Spiral Bits Z2

Yüzev Frezesi Yonde Yukari Kesim Z2  
Brocas helicoidales Z2 - corte ascendente



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

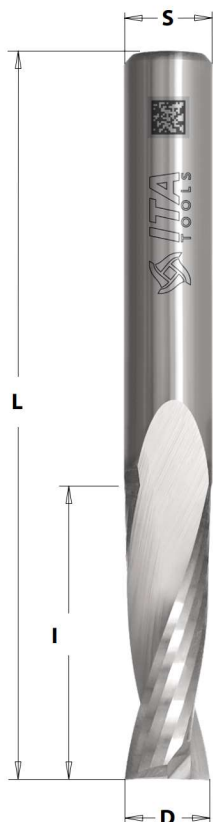
SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

PLATES AND KNIVES

**191**  
positive



**VHM**

**Z2**

**RH**

**LH**

### TECHNICAL DETAILS:

- 2 spiral cutting edges
- Upward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.  
Use a high feed speed on well-clamped workpieces.  
Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH	ARTICLE LH
3	12	50	3	191.03.012.050.03R	191.03.012.050.03L
3	12	60	6	191.03.012.060.06R	191.03.012.060.06L
3	12	60	8	191.03.012.060.08R	191.03.012.060.08L
4	15	50	4	191.04.015.050.04R	191.04.015.050.04L
4	15	60	6	191.04.015.060.06R	191.04.015.060.06L
4	15	60	8	191.04.015.060.08R	191.04.015.060.08L
5	17	50	5	191.05.017.050.05R	191.05.017.050.05L
5	17	60	6	191.05.017.060.06R	191.05.017.060.06L
5	17	60	8	191.05.017.060.08R	191.05.017.060.08L
6	27	70	6	191.06.027.070.06R	191.06.027.070.06L
6	27	70	8	191.06.027.070.08R	191.06.027.070.08L
7	32	80	8	191.07.032.080.08R	191.07.032.080.08L
8	22	70	8	191.08.022.070.08R	191.08.022.070.08L
8	32	80	8	191.08.032.080.08R	191.08.032.080.08L
8	42	90	8	191.08.042.090.08R	191.08.042.090.08L
9	32	83	12	191.09.032.083.12R	191.09.032.083.12L
10	32	80	8	191.10.032.080.08R	191.10.032.080.08L
10	32	80	10	191.10.032.080.10R	191.10.032.080.10L
10	32	83	12	191.10.032.083.12R	191.10.032.083.12L
10	42	90	10	191.10.042.090.10R	191.10.042.090.10L
10	42	90	12	191.10.042.090.12R	191.10.042.090.12L
12	35	83	8	191.12.035.083.08R	191.12.035.083.08L
12	35	83	12	191.12.035.083.12R	191.12.035.083.12L
12	42	90	12	191.12.042.090.12R	191.12.042.090.12L
12	52	100	12	191.12.052.100.12R	191.12.052.100.12L
16	35	90	16	191.16.035.090.16R	191.16.035.090.16L
20	60	120	20	191.20.060.120.20R	191.20.060.120.20L

**TBOX**  
Darbagaldi & Instrumenti

## Solid Carbide Finishing Upcut Spiral Bits Z2

Yüzey Frezesi Yonde Yukari Kesim Z2  
Brocas helicoidales Z2 - corte ascendente



D inch	I inch	L inch	S inch	ARTICLE RH	ARTICLE LH
1/8	1/2	2	1/4	191.32.127.508.64R	191.32.127.508.64L
5/32	1/2	2	1/4	191.39.127.508.64R	191.39.127.508.64L
1/4	3/4	2	1/4	191.64.191.508.64R	191.64.191.508.64L
1/4	1	2-1/2	1/4	191.64.254.635.64R	191.64.254.635.64L
5/16	1	3	1/2	191.79.254.762.13R	191.79.254.762.13L
3/8	1-1/4	3-1/4	1/2	191.95.318.826.13R	191.95.318.826.13L
1/2	1-1/4	3	1/2	191.13.318.762.13R	191.13.318.762.13L
1/2	1-1/2	3-1/2	1/2	191.13.381.889.13R	191.13.381.889.13L
1/2	1-1/2	4	1/2	191.13.381.102.13R	191.13.381.102.13L
5/8	2-1/8	4-5/16	5/8	191.16.540.110.16R	191.16.540.110.16L
3/4	2-1/8	4-5/16	3/4	191.19.540.110.19R	191.19.540.110.19L



Other dimensions  
are available on order

PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUCKS

PLATES AND KNIVES

## Solid Carbide Finishing Downcut Spiral Bits Z2

Yüzey Frezesi Tarafı Aşağı Kesim Z2  
Brocas helicoidales Z2 - corte descendente



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

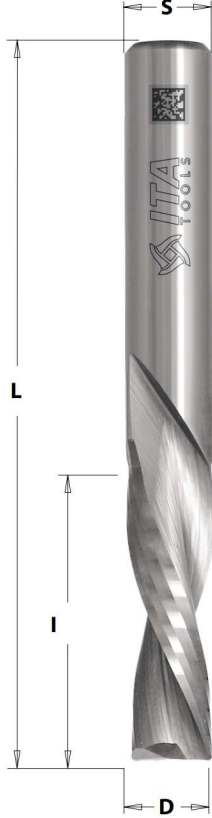
SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

PLATES AND KNIVES

**192**  
negative



**VHM**

**Z2**

**RH**

### TECHNICAL DETAILS:

- 2 spiral cutting edges
- Downward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.  
Use a high feed speed on well-clamped workpieces.  
Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH
3	12	50	3	192.03.012.050.03R
3	12	60	6	192.03.012.060.06R
3	12	60	8	192.03.012.060.08R
4	15	50	4	192.04.015.050.04R
4	15	60	6	192.04.015.060.06R
4	15	60	8	192.04.015.060.08R
5	17	50	5	192.05.017.050.05R
5	17	60	8	192.05.017.060.08R
5	17	60	6	192.05.017.060.06R
6	27	70	6	192.06.027.070.06R
6	27	70	8	192.06.027.070.08R
8	22	70	8	192.08.022.070.08R
8	32	80	8	192.08.032.080.08R
8	42	90	8	192.08.042.090.08R
10	32	80	10	192.10.032.080.10R
12	35	83	12	192.12.035.083.12R

D inch	I inch	L inch	S inch	ARTICLE RH
1/8	1/2	2	1/4	192.32.127.508.64R
5/32	1/2	2	1/4	192.32.127.508.64R
3/16	3/4	2	1/4	192.48.191.508.64R
1/4	3/4	2	1/4	192.64.191.508.64R
1/4	1	2-1/2	1/4	192.64.254.635.64R
5/16	1	3	1/2	192.79.254.762.13R
3/8	1-1/4	3-1/4	1/2	192.95.318.826.13R
1/2	1-1/4	3	1/2	192.13.318.762.13R
1/2	1-1/2	3-1/2	1/2	192.13.381.889.13R
1/2	1-1/2	4	1/2	192.13.381.102.13R



Other dimensions  
are available on order



## Solid Carbide Finishing Upcut Spiral Bits Z3

Yüzeý Frezesi Yonde Yukari Kesim Z3  
Brocas helicoidales Z3 - corte ascendente



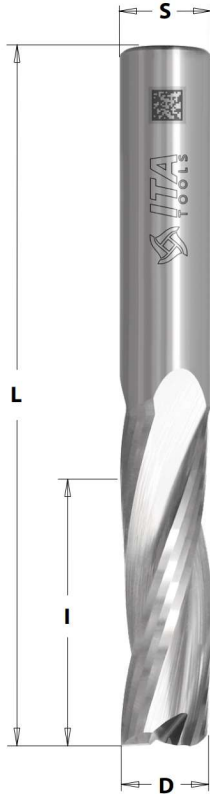
**193**  
positive

**VHM**

**Z3**

**RH**

**LH**



### TECHNICAL DETAILS:

- 3 spiral cutting edges
- Upward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.  
Use a high feed speed on well-clamped workpieces.  
Can be used on machining centres, point to point machines, CNC routers.

D	I	L	S	ARTICLE	ARTICLE
mm	mm	mm	mm	RH	LH
8	32	80	8	193.08.032.080.08R	193.08.032.080.08L
10	32	80	10	193.10.032.080.10R	193.10.032.080.10L
10	42	90	10	193.10.042.090.10R	193.10.042.090.10L
12	35	83	12	193.12.035.080.10R	193.12.035.080.10L
12	42	90	12	193.12.042.090.12R	193.12.042.090.12L
12	52	100	12	193.12.052.100.12R	193.12.052.100.12L
16	35	90	16	193.16.035.090.16R	193.16.035.090.16L
16	55	110	16	193.16.055.110.16R	193.16.055.110.16L
16	72	120	16	193.16.072.120.16R	193.16.072.120.16L
18	55	110	18	193.18.055.110.18R	193.18.055.110.18L
20	60	120	20	193.20.060.120.20R	193.20.060.120.20L
20	70	120	20	193.20.070.120.20R	193.20.070.120.20L
20	102	165	20	193.20.102.165.20R	193.20.102.165.20L

D	I	L	S	ARTICLE	ARTICLE
inch	inch	inch	inch	RH	LH
5/16	1	3	1/2	193.79.254.762.13R	193.79.254.762.13L
3/8	1-1/4	3-1/4	1/2	193.95.318.826.13R	193.95.318.826.13L
1/2	1-1/4	3	1/2	193.13.318.762.13R	193.13.318.762.13L
1/2	1-1/2	3-1/2	1/2	193.13.381.889.13R	193.13.381.889.13L
5/8	2-1/8	4-5/16	5/8	193.16.540.110.16R	193.16.540.110.16L
3/4	2-1/8	4-5/16	3/4	193.19.540.110.19R	193.19.540.110.19L



Other dimensions are available on order



# Solid Carbide Finishing Upcut Spiral Bits Z3 with Chipbreaker

Kaba İşleme Frezesi Yonde Yukari Kesim Z3

Brocas de HW integral helicoidales con rompevirutas Z3R corte ascendente



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

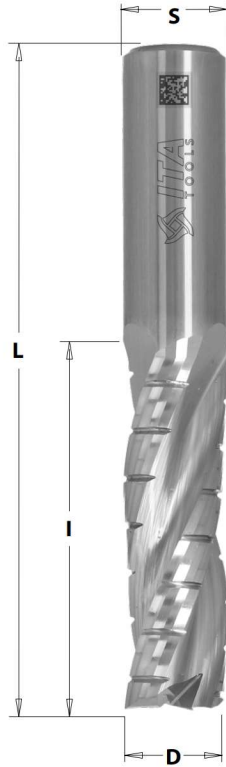
PLATES AND KNIVES

**193Rn**  
positive

VHM

Z3R

RH



**TECHNICAL DETAILS:**

- 3 spiral cutting edges
- Upward chip ejection

**APPLICATION:**

For cutting and milling in solid wood and wood-based materials.  
Use a high feed speed on well-clamped workpieces.  
Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH
6	22	60	6	193.06.022.060.06Rn
8	32	72	8	193.08.032.072.08Rn
10	32	72	10	193.10.032.072.10Rn
10	42	90	10	193.10.042.090.10Rn
10	52	100	10	193.10.052.100.10Rn
12	42	90	12	193.12.042.090.12Rn
12	52	100	12	193.12.052.100.12Rn
14	42	100	14	193.14.042.100.14Rn
16	42	90	16	193.16.042.090.16Rn
16	52	100	16	193.16.052.100.16Rn
16	62	110	16	193.16.062.110.16Rn
16	72	130	16	193.16.072.130.16Rn
18	55	110	18	193.18.055.110.18Rn
20	60	120	20	193.20.060.120.20Rn
20	102	165	20	193.20.102.165.20Rn

D inch	I inch	L inch	S inch	ARTICLE
1/2	1-1/4	3	1/2	193.13.318.762.13Rn
5/8	2-1/8	4-5/16	5/8	193.16.540.110.16Rn
3/4	4	6-1/2	3/4	193.19.102.165.19Rn



Other dimensions are available on order



## Solid Carbide Finishing Downcut Spiral Bits Z3

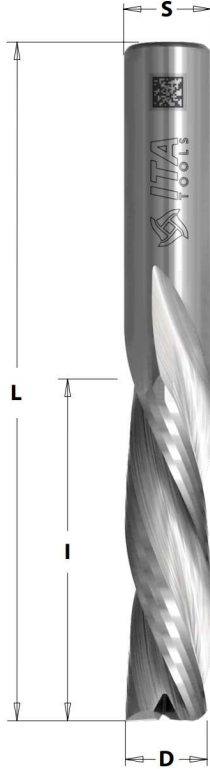
Yüzey Frezesi Tarafı Aşağı Kesim Z3

Brocas de HW integral helicoidales Z3 corte descendente



194

negative



VHM

Z3

RH

### TECHNICAL DETAILS:

- 3 spiral cutting edges
- Downward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.

Use a high feed speed on well-clamped workpieces.

Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH
10	32	80	10	194.10.032.080.10R
10	42	90	20	194.10.042.090.10R
12	35	83	12	194.12.035.083.12R
14	50	110	10	194.14.050.110.14R
16	55	110	10	194.16.055.110.16R
16	35	90	10	194.16.035.090.16R
18	55	110	10	194.18.055.110.18R
20	60	120	20	194.20.060.120.20R
20	72	120	10	194.20.072.120.20R

D inch	I inch	L inch	S inch	ARTICLE RH
3/8	1-1/4	3-1/4	1/2	194.95.318.826.13R
1/2	1-1/4	3	1/2	194.13.318.762.13R
1/2	1-1/2	3-1/2	1/2	194.13.381.889.13R
5/8	2-1/8	4-5/16	5/8	194.16.540.110.16R
3/4	2-1/8	4-5/16	3/4	194.19.540.110.19R



Other dimensions are available on order

PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUCKS

PLATES AND KNIVES





## Solid Carbide Roughing Upcut Spiral Bits Z3

Kaba İşleme Frezesi Yonde Yukari Kesim Z3

Brocas de HW integral helicoidales con rompevirutas Z3R corte ascendente



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

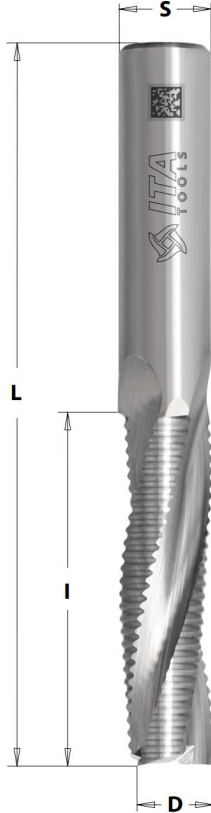
SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

PLATES AND KNIVES

**195**  
positive



**VHM**

**Z3**

**RH**

**LH**

### TECHNICAL DETAILS:

- 3 spiral cutting edges
- Upward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.  
Use a high feed speed on well-clamped workpieces.  
Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH	ARTICLE LH
6	32	70	6	195.06.032.070.06R	195.06.032.070.06L
8	22	63	8	195.08.022.063.08R	195.08.022.063.08L
8	32	80	8	195.08.032.080.08R	195.08.032.080.08L
10	32	80	10	195.10.022.070.10R	195.10.022.070.10L
10	42	90	10	195.10.032.070.10R	195.10.032.070.10L
12	35	83	12	195.12.035.083.12R	195.12.035.083.12L
12	42	90	12	195.12.042.090.12R	195.12.042.090.12L
12	52	100	12	195.12.052.100.12R	195.12.052.100.12L
14	58	110	14	195.14.058.110.14R	195.14.058.110.14L
16	35	90	16	195.16.035.090.16R	195.16.035.090.16L
16	42	90	16	195.16.042.090.16R	195.16.042.090.16L
16	55	110	16	195.16.055.110.16R	195.16.055.110.16L
16	72	120	16	195.16.072.120.16R	195.16.072.120.16L
18	55	110	18	195.18.055.110.18R	195.18.055.110.18L
20	60	120	20	195.20.060.120.20R	195.20.060.120.20L
20	102	165	20	195.20.102.165.20R	195.20.102.165.20L



Other dimensions  
are available on order

D inch	I inch	L inch	S inch	ARTICLE RH	ARTICLE LH
3/8	1-1/4	3-1/4	1/2	195.95.318.826.13R	195.95.318.826.13L
1/2	1-1/4	3	1/2	195.13.318.762.13R	195.13.318.762.13L
5/8	2-1/8	4-5/16	5/8	195.16.540.110.16R	195.16.540.110.16L
3/4	4	6-1/2	3/4	195.19.102.165.19R	195.19.102.165.19L



## Solid Carbide Roughing Upcut Spiral Bits Z3

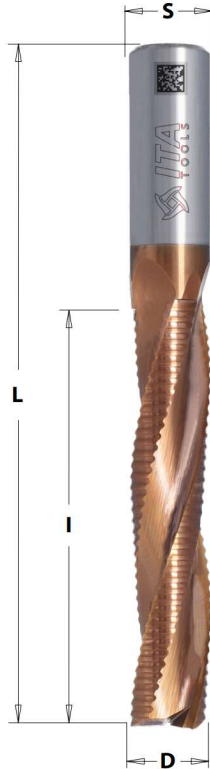
Kaba İşleme Frezesi Yonde Yukari Kesim Z3

Brocas de HW integral helicoidales con rompevirutas Z3R corte ascendente



195

positive



VHM

Z3

RH

### TECHNICAL DETAILS:

- 3 spiral cutting edges
- Upward chip ejection
- With TiSiN coating

### APPLICATION:

For cutting and milling in solid wood and wood-based materials. Use a high feed speed on well-clamped workpieces. Can be used on machining centres, point to point machines, CNC routers.

### ADVANTAGES:

High wear resistance during processing in hard materials. Extended tool life and higher machining quality.

### CUTTER WITH TiSiN COATING

D mm	I mm	L mm	S mm	ARTICLE RH
10	22	70	10	195.10.022.070.10TSR
10	35	70	10	195.10.035.070.10TSR
12	22	70	12	195.12.022.070.12TSR
12	25	70	12	195.12.025.070.12TSR
12	35	80	12	195.12.035.080.12TSR



Other dimensions  
are available on order



## Solid Carbide Roughing Routers for Door-Locks

Frezezi Donanim Oluk Kesici  
Brocas de HW integral helicoidales para cerraduras de las puertas



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

PLATES AND KNIVES

**195**  
positive

**VHM**

**Z3R**

**Z3**

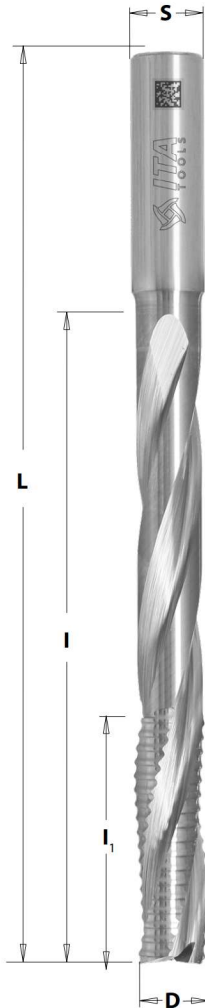
**RH**

### TECHNICAL DETAILS:

- 3 spiral cutting edges
- Upward chip ejection

### APPLICATION:

For milling pockets for a lock in solid wood and wood-like materials designed for use on CNC machines.



D mm	I mm	I <sub>1</sub> mm	L mm	S mm	ARTICLE RH
12	45	95	150	12	195.12.095.150.12R
14	45	95	150	14	195.14.095.150.14R
16	45	95	150	16	195.16.095.150.16R
18	45	95	150	18	195.18.095.150.18R
20	45	95	150	20	195.20.095.150.20R

### SPIRAL BITS CHIP-BREAKER FOR 60° V-POINT LOCKSETS

D mm	I mm	L mm	S mm	ARTICLE RH
14	58	110	14	195.14.058.110.14Rv
16	55	110	16	195.16.055.110.16Rv



Other dimensions  
are available on order



## Solid Carbide Roughing Downcut Spiral Bits Z3

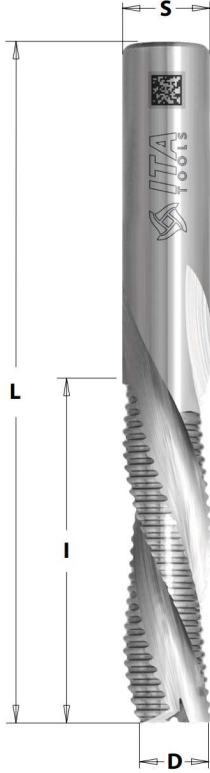
Yüzey Frezesi Tarafı Aşağı Kesim Z3

Brocas de HW integral helicoidales Z3 corte descendente



196

negative



VHM

Z3R

RH

### TECHNICAL DETAILS:

- 3 spiral cutting edges
- Downward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.

Use a high feed speed on well-clamped workpieces.

Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH
8	32	80	8	196.08.032.080.08R
10	42	90	10	196.10.042.090.10R
12	35	83	12	196.12.035.083.12R
12	42	90	12	196.12.042.090.12R
12	52	100	12	196.12.052.100.12R
14	50	110	14	196.14.050.110.14R
16	55	110	16	196.16.055.110.16R
18	55	110	18	196.18.055.110.18R
20	60	120	20	196.20.060.120.20R
20	72	120	20	196.20.072.120.20R
20	102	165	20	196.20.102.165.20R

D inch	I inch	L inch	S inch	ARTICLE RH
1/2	1-1/4	3	1/2	196.13.318.762.13R
5/8	2-1/8	4-5/16	5/8	196.16.540.110.16R
3/4	4	6-1/2	3/4	196.19.102.165.19R



Other dimensions  
are available on order



## Solid Carbide Finishing & Roughing Upcut Spiral Bits Z4

Yüzey Frezes Z4 Kaba İşleme + Yüzey

Brocas de HW integral helicoidales Z4 - Acabado + Desbaste corte ascendente



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUCKS

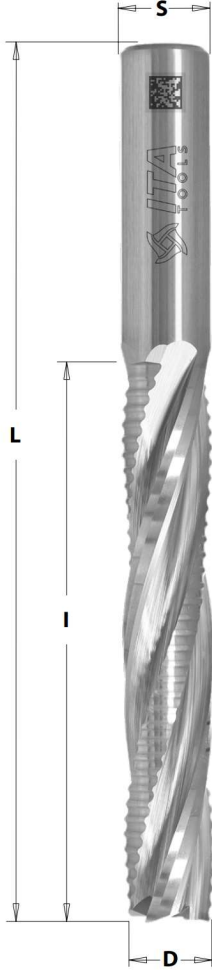
PLATES AND KNIVES

**197**  
positive

**VHM**

**Z4**

**RH**



### TECHNICAL DETAILS:

- 2 finishing spiral cutting edges
- 2 roughing spiral cutting edges
- Upward chip ejection

### APPLICATION:

For cutting and milling in solid wood and wood-based materials.

Use a high feed speed on well-clamped workpieces.

Can be used on machining centres, point to point machines, CNC routers.

D mm	I mm	L mm	S mm	ARTICLE RH
8	32	70	8	197.08.032.070.08R
10	32	70	10	197.10.032.070.10R
12	32	70	12	197.12.032.070.12R
12	42	90	12	197.12.042.090.12R
14	32	90	14	197.14.032.090.14R
16	35	90	16	197.16.035.090.16R
16	42	100	16	197.16.042.100.16R
16	55	110	16	197.16.055.110.16R
18	55	110	18	197.18.055.110.18R
20	60	120	20	197.20.060.120.20R



Other dimensions  
are available on order



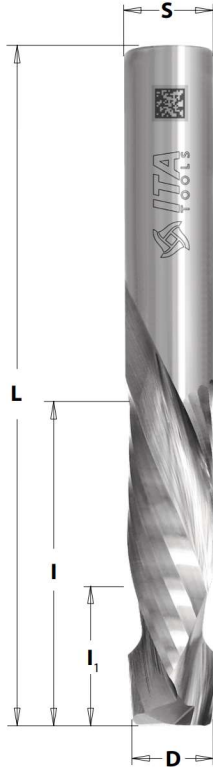
## Solid Carbide Finishing Up & Downcut Spiral Bits

Yüzey Frezesi Sıkıştırma Aşağı&Yukarı  
Brocas de HW integral de fresado de compresión



190

positive-negative



VHM

Z1+1

Z2+2

Z3+3

RH

### TECHNICAL DETAILS:

- 1+1 spiral cutting edges
- 2+2 spiral cutting edges
- 3+3 spiral cutting edges

### APPLICATION:

Used for cutting, copying, panel sizing and any routing applications on solid wood, wood composites, plastic materials and laminates. Use a high feed speed on well-clamped workpieces. Can be used on machining centres, point to point machines, CNC routers.

D	I	I <sub>1</sub>	L	S	Z	ARTICLE RH
3	5	20	60	3	1+1	190.03.020.060.03R
4	5	21	60	4	1+1	190.04.021.060.04R
5	8	22	60	5	2+2	190.05.022.060.05R
6	5	22	60	6	1+1	190.06.022.060.06R
6	5	22	60	6	2+2	190.06.022.060.06Rs
8	8	22	70	8	2+2	190.08.022.070.08R
10	8	22	70	8	2+2	190.10.022.070.10R
10	5	32	80	8	2+2	190.10.032.080.10R
10	7	42	90	10	2+2	190.10.042.090.10R
12	9	25	83	12	3+3	190.12.025.083.12R
12	9	35	90	12	3+3	190.12.035.090.12R
12	7	42	90	12	2+2	190.12.042.090.12R
12	7	52	100	12	2+2	190.12.052.100.12R
16	18	42	100	16	2+2	190.16.042.100.16R
16	21	55	110	16	2+2	190.16.055.110.16R
18	24	55	110	18	2+2	190.18.055.110.18R

D	I	I <sub>1</sub>	L	S	Z	ARTICLE RH
1/4	9/32	7/8	2-1/2	1/4	2+2	190.64.222.635.64R
3/8	3/16	7/8	3	3/8	2+2	190.95.222.762.95R
1/2	15/32	1	3	1/2	2+2	190.13.254.762.13R
1/2	1/4	1-1/8	3	1/2	3+3	190.13.286.762.13R
1/2	13/64	7/8	3	1/2	2+2	190.13.222.762.13R



Other dimensions  
are available on order



## Solid Carbide Finishing Up & Downcut Spiral Bits

Yüzey Frezesi Sıkıştırma Aşağı & Yukarı  
Brocas de HW integral de fresado de compresión



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

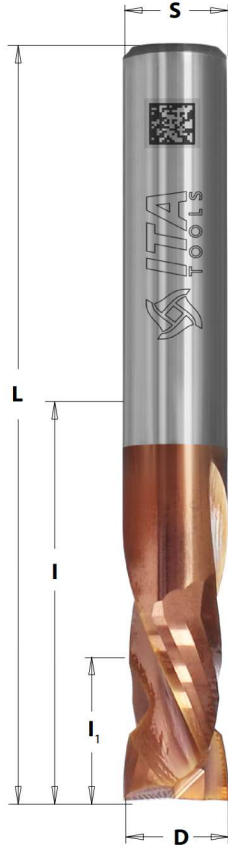
SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

PLATES AND KNIVES

**190**  
positive-negative



**VHM**

**Z1+1**

**Z2+2**

**Z3+3**

**RH**

### TECHNICAL DETAILS:

- 1+1 spiral cutting edges
- 2+2 spiral cutting edges
- 3+3 spiral cutting edges

### APPLICATION:

Used for cutting, copying, panel sizing and any routing applications on solid wood, wood composites, plastic materials and laminates. Use a high feed speed on well-clamped workpieces. Can be used on machining centres, point to point machines, CNC routers.

### ROUTER WITH TiSiN COATING:

High wear resistance during processing in hard materials. Extended tool life and higher machining quality.

D mm	I mm	I <sub>1</sub> mm	L mm	S mm	Z	ARTICLE RH
6	2	12	60	6	2+2	190.06.012.060.06TSR
6	8	22	60	6	1+1	190.06.022.060.06TSR
8	3	18	70	8	2+2	190.08.018.070.08TSR
8	8	22	70	8	2+2	190.08.022.070.08TSR
10	5	18	70	10	2+2	190.10.018.070.10TSR
10	8	22	70	10	2+2	190.10.022.070.10TSR
10	6	25	80	10	2+2	190.10.025.080.10TSR
12	5	18	70	12	2+2	190.12.018.070.12TSR
12	6	25	83	12	3+3	190.12.025.083.12TSR



Other dimensions  
are available on order



## Solid Carbide Finishing Up & Downtcut Spiral Bits

Yüzey Frezesi Sıkıştırma Aşağı & Yukarı  
Brocas de HW integral de fresado de compresión



### X90

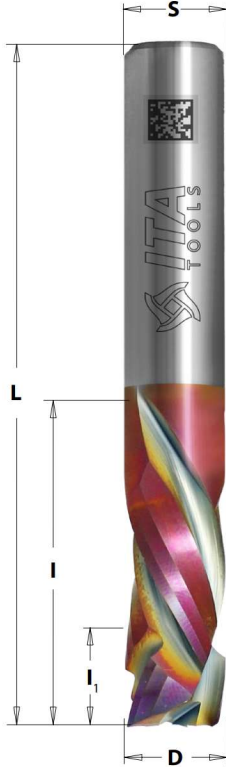
positive-negative

VHM

Z2+2

Z3+3

RH



#### TECHNICAL DETAILS:

- Longlife solid carbide finishing up & downtcut spiral bits
- 2+2 spiral cutting edges
- 3+3 spiral cutting edges

#### APPLICATION:

Used for cutting, copying, panel sizing and routing applications in chipboard, MDF and plywood. Coating maintain a sharp cutting edge, eliminate chip sticking on the cutting edge making the longer tool life and high quality of machining in the hardest materials. Can be used on machining centres, point to point machines and CNC routers.

D mm	I mm	I <sub>1</sub> mm	L mm	S mm	Z	TYPE	ARTICLE RH
12	7,5	25	80	12	2+2	Finishing	X90.12.025.080.12PR
12	8	25	80	12	3+3	Finishing	X90.12.025.080.12PR3
12	8	35	80	12	2+2	Finishing	X90.12.035.080.12PR
12	8	35	80	12	3+3	Finishing	X90.12.035.080.12PR3
12	8	35	80	12	2+2	Chipbreaker	X90.12.035.080.12PRz

PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUCKS

PLATES AND KNIVES





## Round Nose Solid Carbide Finishing Upcut Spiral Bits

Yüzey Frezesi Yuvarlak Burun Yonde Yukari Kesim  
Brocas de HW integral helicoidales corte ascendente cabeza redondeada



PCD TOOLS

SOLID CARBIDE  
SPIRAL BITS

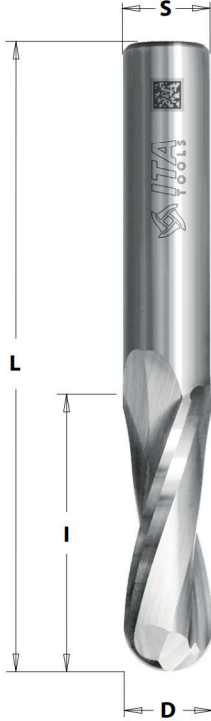
SPIRAL BITS FOR  
COMPOSITE CUTTING

SAW BLADES

CNC ROUTER CUTTERS  
& CHUKS

PLATES AND KNIVES

**199**  
positive



**VHM**

**Z2**

**RH**

### TECHNICAL DETAILS:

- 2 spiral cutting edges
- Upward chip ejection

### APPLICATION:

Used for milling, template routing, panel sizing and any routing application on solid wood, wood composites, plastic materials and laminates. Can be used at a high feed speed on well-clamped workpieces. For use on machining centers, point-to-point boring machines, CNC routers.

D mm	R mm	I mm	L mm	S mm	Z	ARTICLE RH
6	3	27	70	6	2	199.06.027.070.06R
8	4	32	80	8	2	199.08.032.080.08R
10	5	32	80	10	2	199.10.032.080.10R
12	6	35	80	12	2	199.12.035.080.12R
16	8	55	110	16	2	199.16.055.110.16R



Other dimensions  
are available on order

