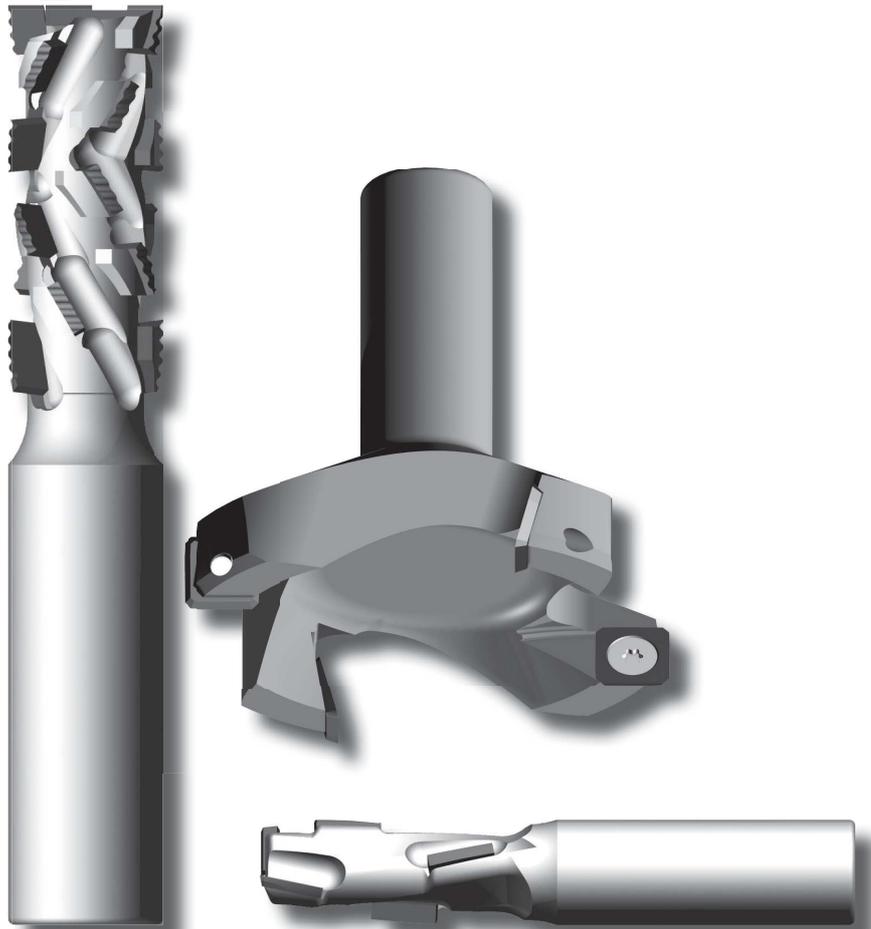


# CNC MILLING TOOLS

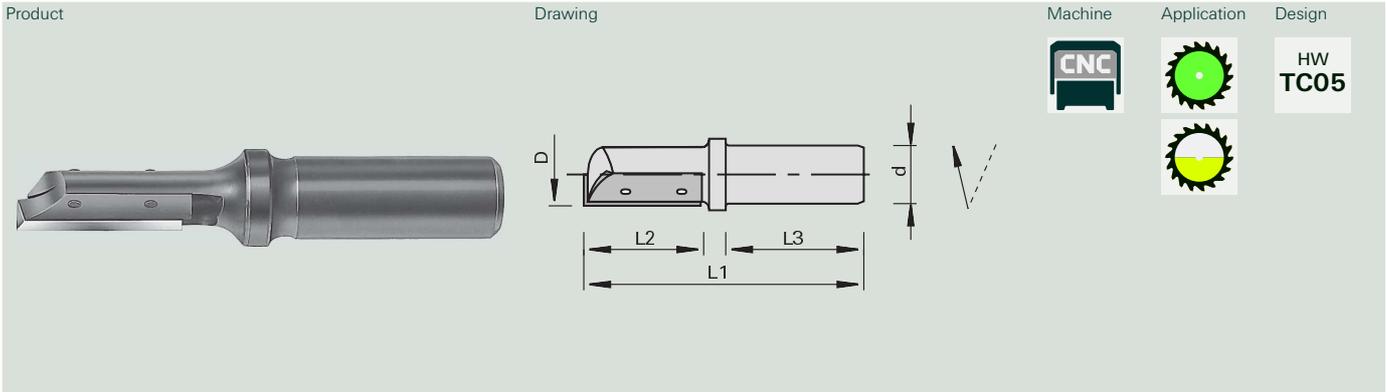
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# HW 2231 Shank-Type Cutters

With HW turnover knives



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for jointing, rabbeting and grooving in solid woods and wood-based panels</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<ul style="list-style-type: none"> <li>• cutting edge parallel to cutter axis and face cutting</li> <li>• cutting material: HW TC05</li> </ul>		<ul style="list-style-type: none"> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck, adapter</li> </ul>

**Product features** **Order information**

Ø D [mm]	L2 [mm]	Ø d [mm]	L1 [mm]	Z					PU [pc.]	L	Order-No.
8.0	20	12	70	1					1		50811001
10	25	10	75	1					1		50811900
10	25	12	75	1					1		50811002
12	30	12	80	1					1		50811003

Turnover Knives	B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
for Ø D = 8	20	4.1	1.1	TC05	10		50450150
for Ø D = 10	25	5.5	1.1	TC05	10		50450152
for Ø D = 12+14	30	5.5	1.1	TC05	10		50450153

Spare parts	Dimension [mm]	Suitable for	PU [pc.]	L	Order-No.
Clamping Wedges	B=20	50811001	2	o	175722
Clamping Wedges	B=30	50811003	2	o	175726
Clamping Wedges	B=25	50811002, 50811900	2	o	175724
Head Cap Screws	M2,5x3 T8	50811001	10		168237
Head Cap Screws	M3x5,5 T8	50811003	10		168239
Head Cap Screws	M2,5x4 T8	50811002, 50811900	10		168238
Screwdriver with flag	T8	For all	1		166499

# HW 2233 Shank-Type Cutters

With HW knives

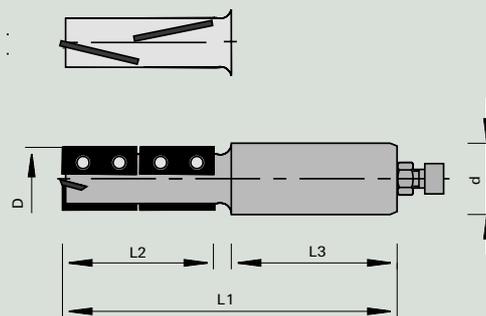
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for jointing, dividing, grooving and rabbeting in laminated panels and solid woods
- traveling plunge cut using Z and X or Y axis

Design

- staggered HW knives with with alternating shear angle
- plunge tip: 4-side HW turnover knife
- cutting material: HW TC05

Advantages

- 4 edge lives by turning the knives and exchanging the upper and lower turnover knife

Notes

- clamping elements: ps-System, TRIBOS , draw-in collet chuck
- with attachment screw

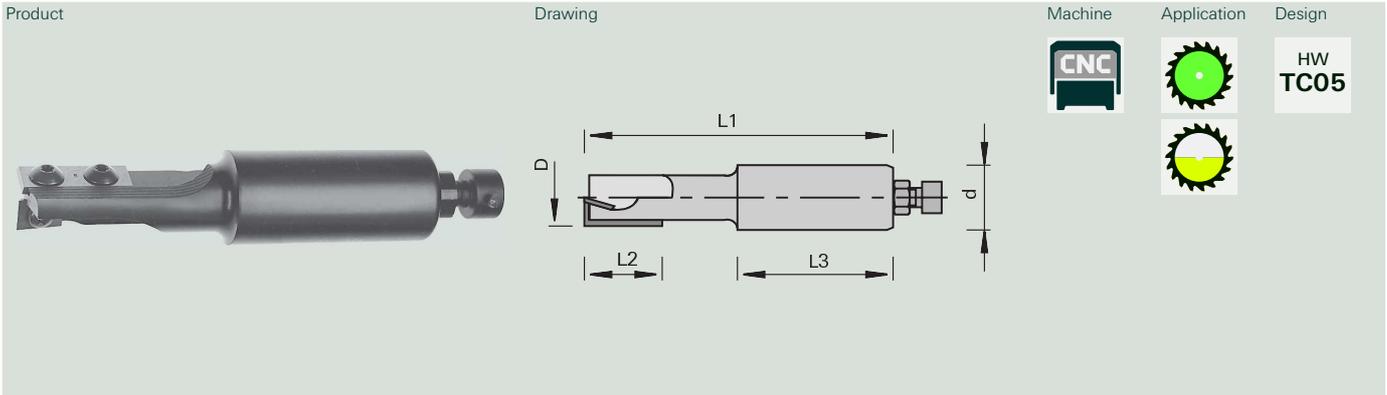
Product features

Order information

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z				PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
20	53	25	55	125	2+2				1	o	50811901		50811902
Turnover Knives						B [mm]	H [mm]	S [mm]	Cutting material		PU [pc.]	L	Order-No.
Knives						29,5	7.0	1.5	TC05		10		50825001
Plunge tip						9	9.0	1.5	TC05		10		50825003
Spare parts				Dimension [mm]						PU [pc.]	L	Order-No.	
Round Head Screws				M3x4 T9						10		180449	
Screwdrivers				T9x60						1		173796	

# HW 2235 Shank-Type Cutters

With HW turnover knives

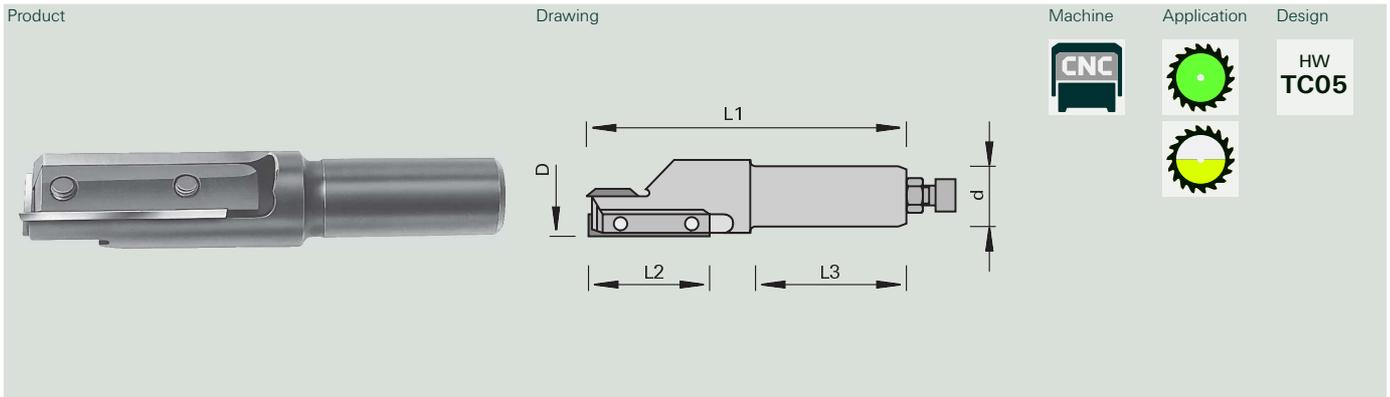


Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for jointing, rabbeting and grooving in solid woods and wood-based panels</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<ul style="list-style-type: none"> <li>• 1 cutting edge parallel to cutter axis and peripheral cutting</li> <li>• 1 plunging tip with shear angle</li> <li>• cutting material: HW TC05</li> </ul>		<ul style="list-style-type: none"> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck</li> <li>• with attachment screw</li> </ul>

Product features						Order information						
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z					PU [pc.]	L	Order-No.
16	30	16	43	92	1+1					1		50811903
Turnover Knives						B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Plunge tip for Ø 16						7,5	12	1.5	TC05	10		50820007
Turnover Knives						29,5	12	1.5	TC05	10	s	50825004
Spare parts			Dimension [mm]							PU [pc.]	L	Order-No.
Head Cap Screws			M3,5x3,8 T15							10		162645
Round Head Screws			M3,5x4 T15							10		168893
Screwdrivers			T15							1		163161

# HW 2236 Shank-Type Cutters

With HW turnover knives



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for jointing, rabbeting and grooving in solid woods and wood-based panels</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<ul style="list-style-type: none"> <li>• 1 cutting edge parallel to cutter axis and peripheral cutting</li> <li>• 1 plunging tip</li> <li>• cutting material: HW TC05</li> <li>• with attachment screw</li> </ul>		<ul style="list-style-type: none"> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck, adapter</li> <li>• with attachment screw</li> </ul>

**Product features** **Order information**

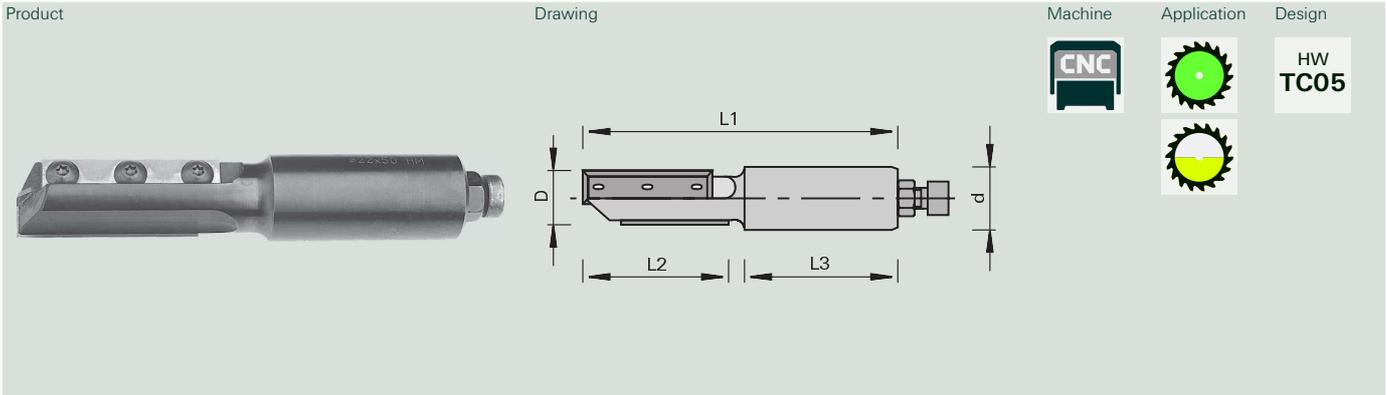
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
16	50	16	45	106	1+1	1				50811904
16	50	25	55	116	1+1	1				50811905
18	50	25	55	116	1+1	1		50811906		50811907

Turnover Knives	B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Turnover Knives	12	12	1.5	TC05	10		50820012
Mini Turnover Knives	50	5.5	1.1	TC05	10		50450155

Spare parts	Dimension [mm]	Suitable for	PU [pc.]	L	Order-No.
Clamping Wedges	B=50	50811904, 50811905	2	o	171111
Clamping Wedges	B=50	50811906	2	o	171114
Clamping Wedges	B=50	50811907	2	o	171113
Head Cap Screws	M3,5x5,5 T15	For all	10		168236
Round Head Screws	M4x5,9 T15	For all	10		167966
Screwdrivers	T15	For all	1		163161

# HW 2237 Shank-Type Cutters

With HW turnover knives



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for jointing, rabbeting and grooving in solid woods and wood-based panels</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<ul style="list-style-type: none"> <li>• cutting edges parallel to cutter axis in stepped design</li> <li>• 1 plunging tip</li> <li>• cutting material: HW TC05</li> <li>• with attachment screw</li> </ul>		<ul style="list-style-type: none"> <li>• Clamping elements: ps-System, TRIBOS, draw-in collet chuck</li> <li>• with attachment screw</li> </ul>

Product features						Order information							
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z				PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
18	55	25	55	125	2				1		50811909		50811908
20	55	25	55	125	2				1				50811910
Turnover Knives				B [mm]	H [mm]	S [mm]	Cutting material				PU [pc.]	L	Order-No.
Turnover Knives HW end sharpened				50	12	1.7	TC05				10		50450121
Spare parts				Dimension [mm]							PU [pc.]	L	Order-No.
Screwdrivers				T15							1		163161
Round Head Screws				M4x5,9 T15							10		167966

# VHW 2265 Roughing Cutters

With negative spiral

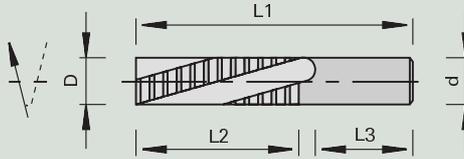
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for rough cutting in solid woods, plywood and uncoated panels
- for cutting of cut-outs and contours
- traveling plunge cut using Z and X or Y axis

Design

- negative spiral for smaller workpieces hard to clamp with face side up
- n max = 30,000 min<sup>-1</sup>

Advantages

- high hogging volume
- cutting pressure towards the bottom thanks to negative spiral

Notes

- slightly rough cutting surface due to fine cut division
- clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck

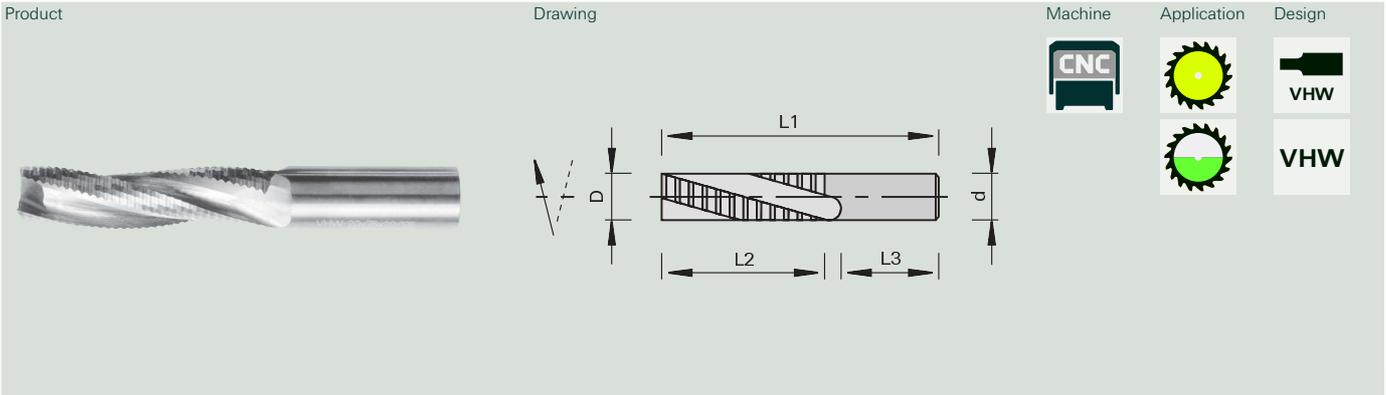
Product features

Order information

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z					PU [pc.]	L	Order-No.
10	30	10	40	75	2					1	s	50811402
12	42	12	45	90	3					1	#	50811404
16	35	16	48	90	3					1		50811029
16	55	16	48	110	3					1		50811409
20	55	20	50	115	3					1		50811414

# VHW 2265-1 Roughing Cutters

With positive spiral



Machine:

Application:

Design:

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for rough cutting in solid woods, plywood and uncoated panels</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<ul style="list-style-type: none"> <li>• positive spiral for tightly clamped workpieces face side down</li> <li>• n max = 30,000 min-1</li> </ul>	<ul style="list-style-type: none"> <li>• high hogging volume</li> <li>• optimum upward chip evacuation thanks to positive spiral</li> </ul>	<ul style="list-style-type: none"> <li>• slightly rough cutting surface due to fine cut division</li> <li>• clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck</li> </ul>

Product features						Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z				PU [pc.]	L	Order-No.
10	30	10	40	75	2					1	50811401
12	45	12	45	90	2					1	50811403
12	45	12	45	90	3					1	50811025
14	35	14	45	90	3					1	50811026
14	55	14	45	110	3					1	50811027
16	35	16	48	90	2					1	50811407
16	35	16	48	90	3					1	50811028
16	55	16	48	110	2					1	50811410
16	55	16	48	110	3					1	50811408
18	55	18	48	115	3					1	50811030
20	55	20	50	115	2					1	50811413
20	55	20	50	115	3					1	50811031
20	75	20	50	135	3					1	50811032

# VHW 2257 Finishing Cutters

With negative spiral

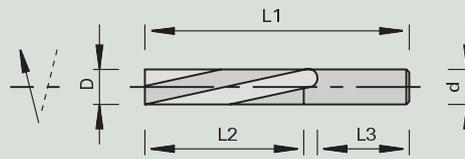
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for finish cutting in solid woods and plastic
- for cutting of cut-outs and contours
- traveling plunge cut using Z and X or Y axis

Design

- negative spiral for smaller workpieces hard to clamp with face side up
- n max = 30,000 min-1

Advantages

- cutting pressure and chip evacuation towards the bottom thanks to negative spiral

Notes

- clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck

Product features

Order information

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z					PU [pc.]	L	Order-No.
4.0	15	4.0	28	60	2					1		50811418
6.0	15	6.0	36	60	2					1		50811420
8.0	30	8.0	36	75	2					1		50811421
10	30	10	40	75	2					1		50811422
12	42	12	45	90	2					1		50811423
12	42	12	45	90	3					1		50811425
16	35	16	48	90	2					1		50811428
16	35	16	48	90	3					1		50811430
16	55	16	48	110	3					1		50811435
20	55	20	50	115	3					1	o	50811438
20	75	20	50	135	3					1		50811562

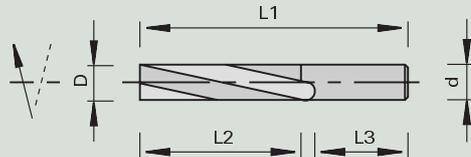
# VHW 257-1 Finishing Cutters

with positive spiral

Product



Drawing



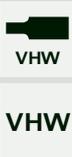
Machine



Application



Design



<p>Machine / Application</p> <ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for finish cutting in solid woods and plastic</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<p>Design</p> <ul style="list-style-type: none"> <li>• positive spiral for tightly clamped workpieces face side down</li> <li>• n max = 30,000 min-1</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>• optimal upward chip evacuation thanks to positive spiral</li> </ul>	<p>Notes</p> <ul style="list-style-type: none"> <li>• clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck</li> </ul>
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Product features						Order information								
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z					PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
6.0	15	6.0	36	60	2					1				50811419
8.0	30	8.0	36	75	2					1				50811034
10	30	10	40	75	2					1				50811036
12	42	12	45	90	2					1				50811037
12	42	12	45	90	3					1				50811424
14	35	14	45	90	3					1				50811426
14	55	14	45	110	3					1				50811427
16	35	16	48	90	2					1				50811040
16	35	16	48	90	3					1				50811429
16	55	16	48	110	2					1				50811041
16	55	16	48	110	3					1		50811434		50811432
18	55	18	48	115	3					1				50811436
20	55	20	50	115	3					1				50811437
20	75	20	50	135	3					1				50811439

# VHW 257-2 Finishing Cutters

two-sided shear angle

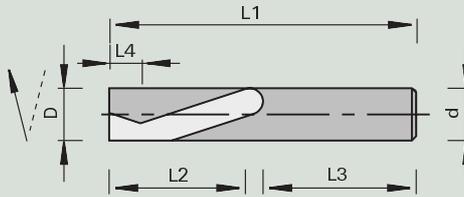
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for finish cutting in solid woods and plastic
- for cutting of cut-outs and contours
- traveling plunge cut using Z and X or Y axis

Design

- two-sided shear angle
- n max = 30,000 min<sup>-1</sup>

Advantages

- optimum cutting quality in laminated panels thanks to shear angle

Notes

- clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck

Product features

Order information

Ø D [mm]	L4 [mm]	L2 [mm]	Ø d [mm]	L1 [mm]	Z					PU [pc.]	L	Order-No.
8.0	7.0	32	8,0	80	2+2					1		50811564
10	7.0	32	10	80	2+2					1		50811565
12	7.0	42	12	90	2+2					1		50811566
16	24	55	16	110	2+2					1		50811567

## VHW 2268 Plunge Roughing Cutters

For door manufacturing

Product Drawing Machine Application Design

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers</li> <li>• for drilling of latchholes and keyholes</li> </ul>	<ul style="list-style-type: none"> <li>• positive spiral</li> <li>• n max = 30,000 min-1</li> </ul>		<ul style="list-style-type: none"> <li>• clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck</li> </ul>

Product features							Order information			
Ø D [mm]	L4 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No.
16	5.0	75	16	48	130	2		1		50811731

## VHW 2269 Plunge Finishing Cutters

For door manufacturing

Product Drawing Machine Application Design

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers</li> <li>• for drilling of peepholes and for through holes</li> </ul>	<ul style="list-style-type: none"> <li>• positive spiral</li> <li>• n max = 30,000 min-1</li> </ul>		<ul style="list-style-type: none"> <li>• clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck</li> </ul>

Product features							Order information			
Ø D [mm]	L4 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No.
12	10	47	12	53	110	2		1		50811449
12	10	70	12	50	130	2		1		50811450
14	10	47	14	45	110	2		1		50811070
16	11	52	16	60	130	2		1		50811071

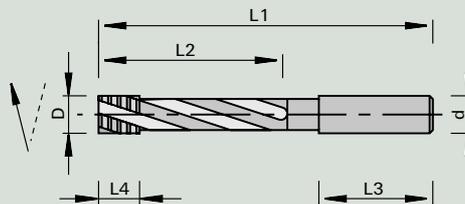
## VHW 2254 Lock-Case Roughing Cutters

For door manufacturing

Product



Drawing



Machine



Application



Design



Machine / Application

- CNC machining centers
- for cutting of lock-cases in doors

Design

- positive spiral
- cutting edges with chip breakers
- roughing cutter

Advantages

- optimum chip evacuation thanks to positive spiral
- high balance quality thanks to cutting edges with chip breakers

Notes

- clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck
- for attachment in horizontal boring-cutting aggregat (Homag, Weeke) side clamping surfaces are necessary
- surcharge for the mounting of Weldon tool holders

Product features

Order information

Ø D [mm]	L4 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	nmax [min-1]		PU [pc.]	L	Order-No.
16	25	115	16	50	175	3	24000		1		50811926
18	25	115	20	50	175	3	24000		1		50811927

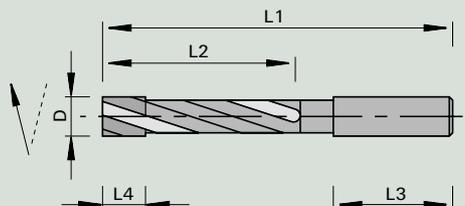
## VHW 2255 Lock-Case Finishing Cutters

For door manufacturing

Product



Drawing



Machine



Application



Design



Machine / Application

- CNC machining centers
- for cutting of lock-cases and face-plates in doors

Design

- positive spiral
- cutting edges with chip breakers
- serrated cutting edge with chip breakers

Advantages

- optimum chip evacuation thanks to positive spiral
- high balance quality thanks to cutting edges with chip breakers

Notes

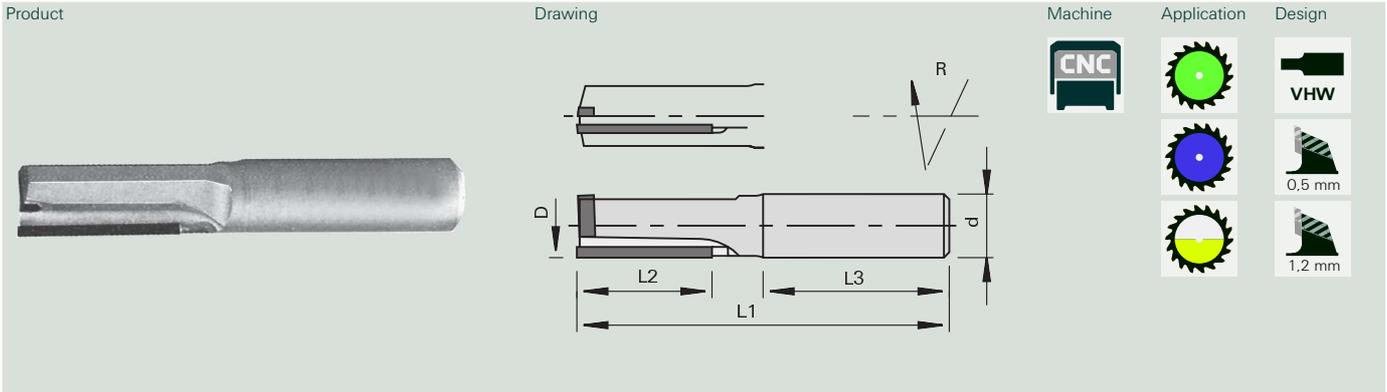
- clamping elements: ps-System with intermediate sleeves, TRIBOS, draw-in collet chuck
- for attachment in horizontal boring-cutting aggregat (Homag, Weeke) side clamping surfaces are necessary
- surcharge for the mounting of Weldon tool holders

Product features

Order information

Ø D [mm]	L4 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	nmax [min-1]		PU [pc.]	L	Order-No.
14	25	95	14	50	155	2	24000		1		50811928
16	25	115	16	50	175	2	24000		1		50811929

# DP 3501 Shank-Type Cutters



Machine	Application	Design

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for jointing and sizing without overlap marks in wood-based panels, solid woods and plastics</li> </ul>	<ul style="list-style-type: none"> <li>• polished face and high-finish clearance angle</li> <li>• with HW plunge tip for diagonal plunge-cutting (travelling plunge-cut using Z and X axis)</li> <li>• straight cutter axis</li> <li>• solid tungsten carbide body for <math>\leq \varnothing 10</math> mm</li> <li>• resharpening area <math>\varnothing 6 + \varnothing 10 = 0.5</math> mm - <math>\varnothing 12 + \varnothing 16 = 1.2</math> mm</li> </ul>	<ul style="list-style-type: none"> <li>• high quality machining of MDF and hard woods</li> <li>• no overlap-marks thanks to continuous cutting edge</li> <li>• increased stability thanks to special design of brazing area</li> </ul>	<ul style="list-style-type: none"> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck</li> <li>• with thread for length adjusting screw</li> </ul>

Product features								Order information					
$\varnothing D$ [mm]	L2 [mm]	$\varnothing d$ [mm]	L3 [mm]	L1 [mm]	Z	n <sub>max</sub> [min-1]	Resharpening area [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
6.0	12	12	40	60	1	24000	1.0		1				50811684
8.0	12	12	35	60	1	24000	0.5		1				50811128
10	22	12	35	70	2	24000	0.5		1	50811930			50811130
12	25.4	12	35	70	1	24000	1.5		1				50811132
16	25.4	16	45	85	1	24000	1.5		1				50811134
16	35	16	45	95	1	24000	1.5		1				50811136

**DP** **3502 Shank-Type Cutters**  
Z=1+1

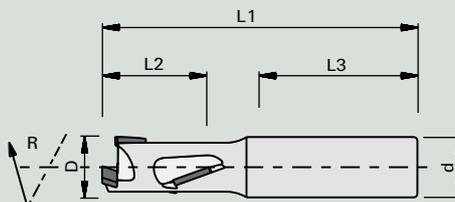
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for jointing, rabbeting, grooving and copying in raw, melamine-, paper-, HPL-laminated, foiled and veneered panels

Design

- with DP plunge tip for diagonal plunge-cutting
- with shear angle
- resharpenable several times
- n max = 24,000 min-1

Advantages

- optimum cutting quality thanks to larger shear angle, alternating top and bottom
- smooth running thanks to special tool body
- Chip-free grooving possible from groove depths of 4.5 mm

Notes

- Feed rates up to 12 m/min
- recommended clamping elements: ps-System, TRIBOS, heat-shrinking chuck
- without thread for length adjusting screw! Specify in your order if required!

Product features

Order information

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z				PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
10	22	12	40	69	1+1				1				58186789 <b>NEW</b>
12	22	12	40	69	1+1				1				58186790 <b>NEW</b>
12	25,4	12,7	40	68	1+1				1				58186791 <b>NEW</b>
12	28	12	40	75	1+1				1	58186793			58186792 <b>NEW</b>
16	22	16	45	78	1+1				1				58186794 <b>NEW</b>
16	28	16	45	83	1+1				1				58186795 <b>NEW</b>
16	35	16	45	90	1+1				1	58186797			58186796 <b>NEW</b>
18	28	16	45	85	1+1				1				58186798 <b>NEW</b>
18	28	20	45	95	1+1				1	58186799			58186800 <b>NEW</b>
18	35	16	45	92	1+1				1	58186801			58186802 <b>NEW</b>
18	35	20	55	102	1+1				1	58186804			58186803 <b>NEW</b>
18	43	16	45	100	1+1				1	58186806			58186805 <b>NEW</b>
18	43	20	55	110	1+1				1	58186808			58186807 <b>NEW</b>
20	35	20	55	102	1+1				1				58186809 <b>NEW</b>
20	52	25	55	120	1+1				1	58186811			58186810 <b>NEW</b>

## DP 3511 High-Performance Roughing Shank-Type Cutters DP for the machining of for solid core panels

Product Drawing Machine Application Design

MEC

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for pre-sizing in roughing quality in wood-based materials, solid wood and plastic</li> <li>• especially suited for the machining of plastic solid core panels (e.g. Trespa®, Corian®, Varicor®, LG-HiMacs, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• high-performance tool for rough and finish milling</li> <li>• with alternating shear angle</li> <li>• with DP plunge tip</li> <li>• face cutting for diagonal plunge-cutting</li> <li>• n max=24,000 min-1</li> </ul>		<ul style="list-style-type: none"> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck</li> <li>• with thread for length adjusting screw</li> </ul>

Product features						Order information		
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	Order-No.
14	20	16	45	75	2+1		1	50811809

## DP 3510 Roughing Cutters DP

Product Drawing Machine Application Design

MEC

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for sizing in roughing quality with chip-free cutting edges on both sides in solid woods and plywood, laminated wood-based materials or other abrasive materials such as GFRP, HPL-compact boards and several sandwich materials</li> <li>• for cutting of cut-outs and contours</li> <li>• traveling plunge cut using Z and X or Y axis</li> </ul>	<ul style="list-style-type: none"> <li>• with alternating shear angle</li> <li>• with DP plunge tip</li> <li>• face cutting for diagonal plunge-cutting</li> <li>• resharpening area ≥ 2.0 mm</li> <li>• n max=24,000 min-1</li> </ul>	<ul style="list-style-type: none"> <li>• for long edge lives also in abrasive materials</li> <li>• chip-free cutting edges on both sides</li> <li>• high milling performance</li> </ul>	<ul style="list-style-type: none"> <li>• slightly rough cutting surface due to fine cut division</li> <li>• clamping elements: we recommend the use of the tools in high precision clamping chucks such as hydro expansion chucks "ps-System", TRIBOS or heat shrink-fit chucks</li> </ul>

Product features						Order information		
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	Order-No.
20	50	20	60	120	2+2		1	50811808

**DP 3514 roughing/finishing cutters**

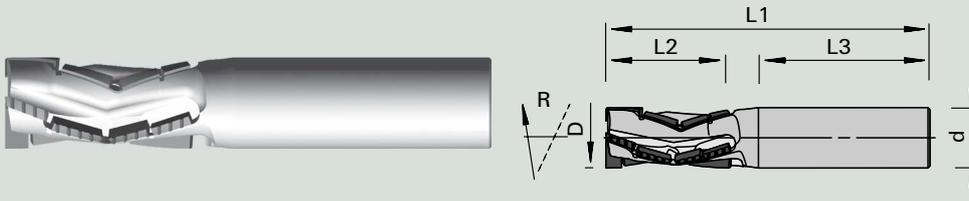
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for sizing in almost finishing quality with chip-free cutting edges on both sides in solid woods and plywood, laminated wood-based panels and sandwich materials
- for cutting of cut-outs and contours
- traveling plunge cut using Z and X or Y axis

Design

- with alternating shear angle
- with DP plunge tip
- face cutting for diagonal plunge-cutting
- resharpening area  $\geq 1.6$  mm
- n max = 30,000 min<sup>-1</sup>

Advantages

- for long edge lives also in abrasive materials
- chip-free cutting edges on both sides
- high hogging volume

Notes

- slightly rough cutting surface due to fine cut division
- clamping elements: we recommend the use of the tools in high precision clamping chucks such as hydro expansion chucks "ps-System", TRIBOS or heat shrink-fit chucks

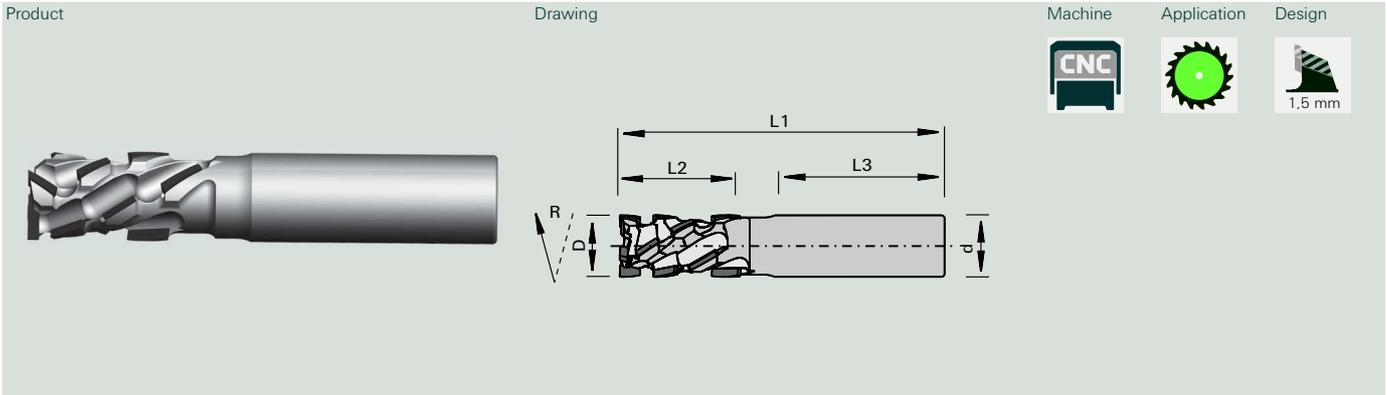
Product features

Order information

$\varnothing D$ [mm]	L2 [mm]	$\varnothing d$ [mm]	L3 [mm]	L1 [mm]	Z	L/R		PU [pc.]	Order-No.
16	32	16	45	85	4 (2+2)	R		1	58811950 <b>NEW</b>

# DP 3503 High-Performance Shank-Type Cutters

Z=2+2



Machine



Application



Design



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for jointing, rabbeting, grooving and copying in raw, melamine-, paper-, HPL-laminated, foiled and veneered panels</li> </ul>	<ul style="list-style-type: none"> <li>• with DP plunge tip for diagonal plunge-cutting</li> <li>• with shear angle</li> <li>• resharpening area 1,2 mm</li> <li>• n max = 24,000 min<sup>-1</sup></li> </ul>	<ul style="list-style-type: none"> <li>• optimum cutting quality thanks to shear angle, alternating top and bottom</li> <li>• smooth running thanks to 4-wing design of cutting edges</li> <li>• very long edge lives, less cutting forces and less noise thanks to optimized tool body</li> </ul>	<ul style="list-style-type: none"> <li>• feed rates up to 20 m/min</li> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck</li> <li>• with thread for length adjusting screw</li> </ul>

Product features						Order information							
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z				PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
16	28	16	45	80	2+2				1				50186147 <b>NEW</b>
16	38	16	45	90	2+2				1	50186149			50186148 <b>NEW</b>
20	28	20	55	95	2+2				1				50186150 <b>NEW</b>
20	28	25	55	95	2+2				1	50186152			50186151 <b>NEW</b>
20	38	20	55	105	2+2				1				50186153 <b>NEW</b>
20	38	25	55	105	2+2				1	50186155			50186154 <b>NEW</b>
20	48	20	55	115	2+2				1				50186156 <b>NEW</b>
20	48	25	55	115	2+2				1	50186158			50186157 <b>NEW</b>
25	65	25	55	130	2+2				1	50186160			50186159 <b>NEW</b>

## DP 3509 High-Performance Shank-Type Cutters

Tool body VHW - DP-Z= 3

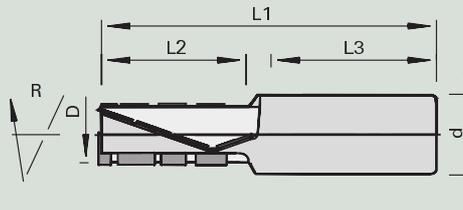
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for sizing and dividing cuts in raw, melamine-, paper-, HPL-laminated, foiled and veneered wood-based materials

Design

- solid carbide design of tool body
- high-performance tool for rough and finish milling, as well as panel sizing with Nesting Technology
- with DP plunge tip
- face cutting for diagonal plunge-cutting
- feed speed up to 25 m/min
- resharpening area 2.0 mm
- n max=24,000 min-1

Advantages

- high cutting quality and smooth running thanks to spiral design of cutting edges
- optimum chip disposal thanks to open arrangement of cutting edges
- optimum cutting lengths suitable for most popular panel thicknesses

Notes

- clamping elements: ps-System, TRIBOS , draw-in collet chuck

Product features

Order information

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	H [mm]		PU [pc.]	Order-No.
12	21	16	45	73	3	16-19		1	58811842 <b>NEW</b>
12	28	16	45	80	3	22-25		1	50811804
12	30	16	45	82	3	28		1	50811805

## DP 3505 High-Performance Shank-Type Cutters

Z=3+3

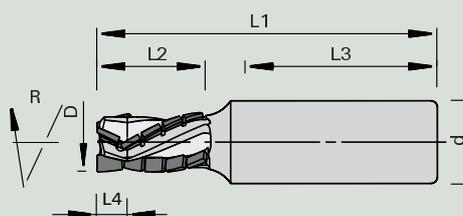
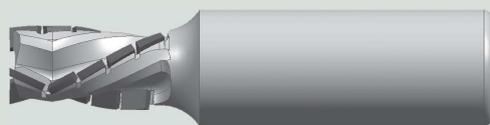
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for sizing and dividing cuts in raw, melamine-, paper-, HPL-laminated, foiled and veneered panels
- high-performance tool for pre- and finish-milling

Design

- with DP plunge tip for diagonal plunge-cutting
- with shear angle
- resharpening area 3.0 mm
- n max = 24,000 min-1

Advantages

- optimum cutting quality thanks to shear angle, alternating top and bottom
- smooth running thanks to spiral cut configuration

Notes

- feed rates up to 30 m/min
- clamping elements: ps-System, TRIBOS , draw-in collet chuck
- with thread for length adjusting screw

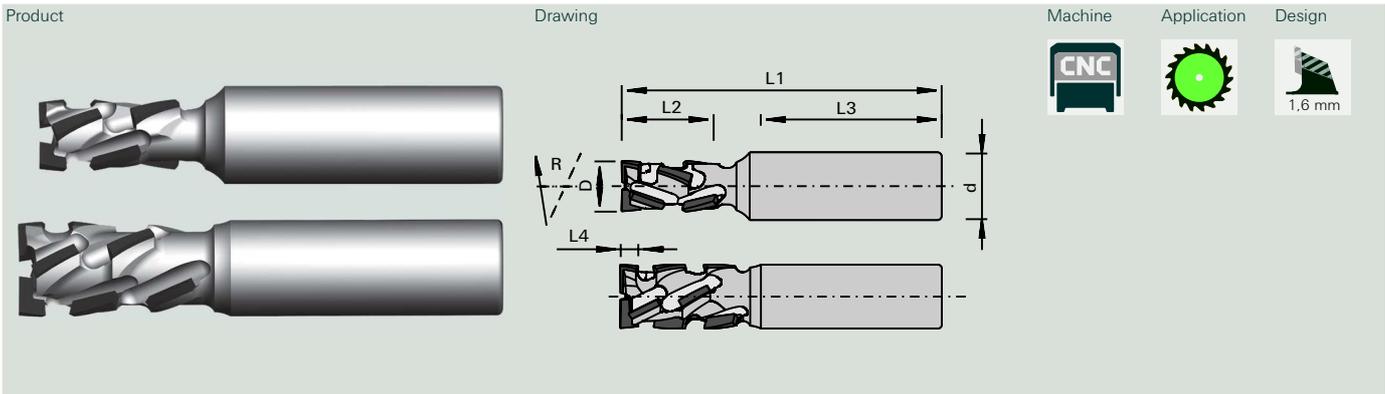
Product features

Order information

Ø D [mm]	L2 [mm]	L4 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
18	28	7	25	55	95	3+3		1				58186118 <b>NEW</b>
20	38	7	20	55	105	3+3		1				58186119 <b>NEW</b>
25	28	7	25	55	95	3+3		1	58186121	58186120		<b>NEW</b>
25	38	7	25	55	105	3+3		1				58186122 <b>NEW</b>
25	48	7	25	55	115	3+3		1	58186125	58186124		<b>NEW</b>

# DP 3513 High-Performance Shank-Type Cutters CM

For Nesting - Z=2+2



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for panel sizing with Nesting Technology</li> <li>• for jointing, rabbeting and *grooving (*negative design)</li> <li>• particularly for processing MDF panels and Multiplex</li> </ul>	<ul style="list-style-type: none"> <li>• with DP plunge tip</li> <li>• face cutting for diagonal plunge-cutting</li> <li>• <math>\varnothing D=12</math> mm with highly stiff tool body</li> <li>• resharpening area 1.6 mm</li> <li>• <math>n \text{ max} = 24,000 \text{ min}^{-1}</math></li> </ul>	<ul style="list-style-type: none"> <li>• high cutting quality and high-quality cutting edges on both sides thanks to specially adapted arrangement of cutting edges</li> <li>• positive spiral: optimum upward chip evacuation towards the dust extraction</li> <li>• negative spiral: downward chip evacuation and cutting pressure</li> <li>• negative spiral especially suitable for smaller or narrow workpieces and for grooving</li> <li>• Z=2+2 = bigger gullets for better chip removal (MDF) and for reducing heat generation, particularly when processing Multiplex</li> </ul>	<ul style="list-style-type: none"> <li>• clamping elements: use in high-precision clamping elements recommended (e.g. TRIBOS, ps-System)</li> <li>• with thread for length adjusting screw</li> <li>• in case of higher feed rates and thicker boards choose the higher diameter</li> <li>• adapt the cutting length to the panel thickness (H)</li> <li>• * indicate "H" in case of Nesting with protection board</li> </ul>

Product features										Order information		
$\varnothing D$	L2	L4	$\varnothing d$	L3	L1	Z	H	Helical direction		PU	L	Order-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]			[pc.]		
12	22		16	45	75	2+2	16-19*	positive		1		58186112 <b>NEW</b>
12	22	4.5	16	45	75	2+2	-19	negative		1		58186113 <b>NEW</b>
16	28	4.5	16	45	80	2+2	-25	negative		1		58186114 <b>NEW</b>

# DP 3506 High-Performance Shank-Type Cutters CM

For Nesting - Z=3+3

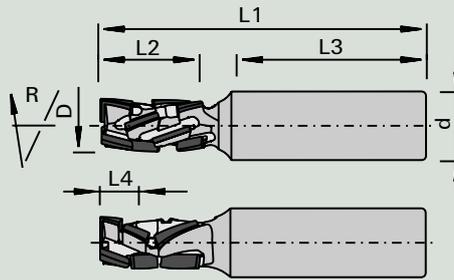
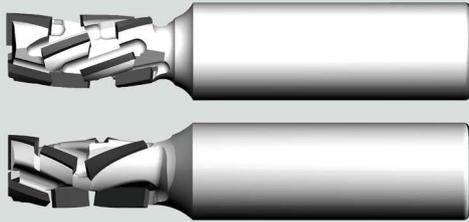
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC routers
- for panel sizing with Nesting Technology
- for jointing, rabbeting and \*grooving (\*negative version) in raw and laminated wood-based materials

Design

- with DP plunge tip
- face cutting for diagonal plunge-cutting
- feed rates up to 25 m/min
- resharpening area 1,6 mm
- n max = 30,000 min-1

Advantages

- high cutting quality and high-quality cutting edges thanks to specially adapted cutting edge configuration
- positive spiral: optimum upward chip evacuation towards the exhaustion
- negative spiral: downward chip evacuation and cutting pressure
- negative spiral especially for smaller or narrow workpieces and for grooving

Notes

- clamping elements: use in high-precision clamping elements recommended (e.g. TRIBOS, ps-System)
- with thread for length adjusting screw
- in case of higher feed rates and thicker boards choose the higher diameter
- adapt the cutting length to the panel thickness (H)
- \* indicate "H" in case of Nesting with protection board

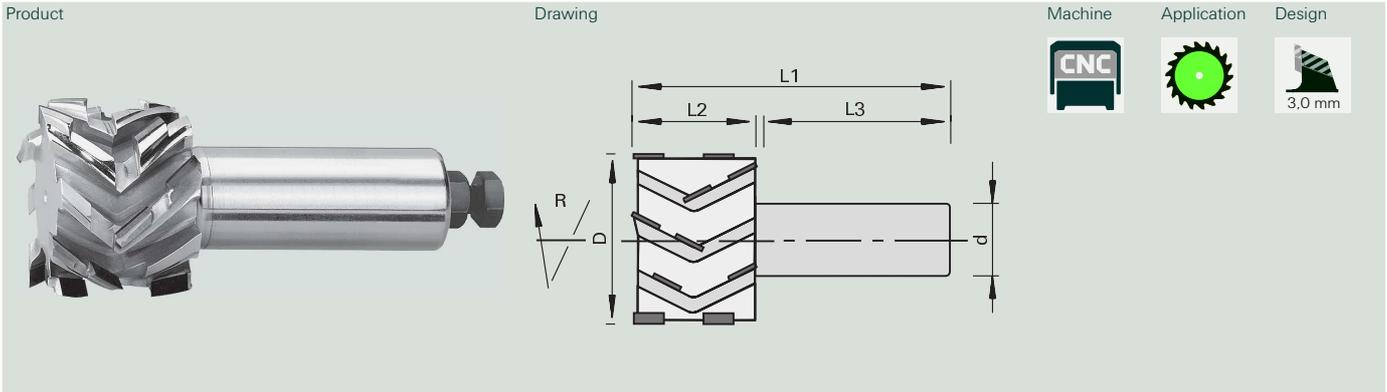
Product features

Order information

Ø D [mm]	L2 [mm]	L4 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	H [mm]	Helical direction		PU [pc.]	L	Order-No.
12	22		16	45	75	3+3	16-19 *	positive		1		58186571 <b>NEW</b>
12	28		16	45	80	3+3	22-25 *	positive		1		58186572 <b>NEW</b>
16	22		16	45	75	3+3	16-19 *	positive		1		58186573 <b>NEW</b>
16	28		16	45	80	3+3	22-25 *	positive		1		58186574 <b>NEW</b>
12	23	7.2	16	45	75	3+3	-19	negative		1		58185518 <b>NEW</b>
14	33	7.2	16	45	85	3+3	-30	negative		1		58185799 <b>NEW</b>
16	28	7.2	16	45	80	3+3	-25	negative		1		50811803

# DP 3507 High-Performance Trimming Router Bits

Z=4+2+4



Machine



Application



Design



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for sizing cuts in raw, melamine-, paper-, HPL-laminated, foiled and veneered panels</li> </ul>	<ul style="list-style-type: none"> <li>• high-performance tool for finish cuts</li> <li>• with shear angle</li> <li>• resharpening area 3.0 mm</li> </ul>	<ul style="list-style-type: none"> <li>• high feed rates (up to 35 m/min) and good edge quality thanks to 4 cutting edges working in top layer</li> <li>• minimized formation of dust thanks to 2 cutting edges working in core of board</li> <li>• very good surface thanks to large cutting circle diameter</li> <li>• good cutting quality on top and bottom edge thanks to opposing shear angle</li> </ul>	<ul style="list-style-type: none"> <li>• preferably for finish-cut operations on pre-sized workpieces</li> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck</li> <li>• with thread for length adjusting screw</li> </ul>

Product features							Order information				
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	H [mm]	PU [pc.]	L	Order-No. [L]	Order-No. [R]	
48	22	25	62	85	4+2+4	16-19	1			58186140 <b>NEW</b>	
48	28	25	62	91	4+2+4	22-25	1			58186142 <b>NEW</b>	
48	35	25	62	98	4+2+4	28-32	1			58186144 <b>NEW</b>	
48	48	25	55	110	4+2+4	35-45	1	58186146		58186145 <b>NEW</b>	

# DP 3600 p-System High-Performance Shank-Type Cutters

Z=1+1 / Z=2+2

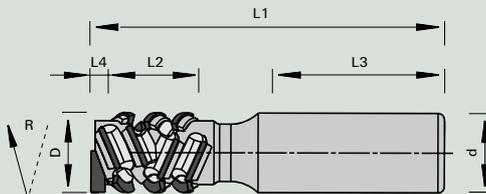
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC stationary machines
- for chip-free high-performance jointing and dividing of solid woods (free of knots) along and across the grain
- for jointing and dividing of melamine-, paper-, HPL-laminated, foiled and veneered panels and lacquered surfaces
- Finish-quality in the case of fiber materials such as fabric-laminated panels, linoleum with jute fibers, cork etc.

Design

- extremely scoring cut
- DP plunge tip
- resharpening area 2.5 mm

Advantages

- maximum cutting quality and edge lives
- large depth of cut possible
- chip-free cuts even on the exit side
- perfectly suitable for laser-edge-technology

Notes

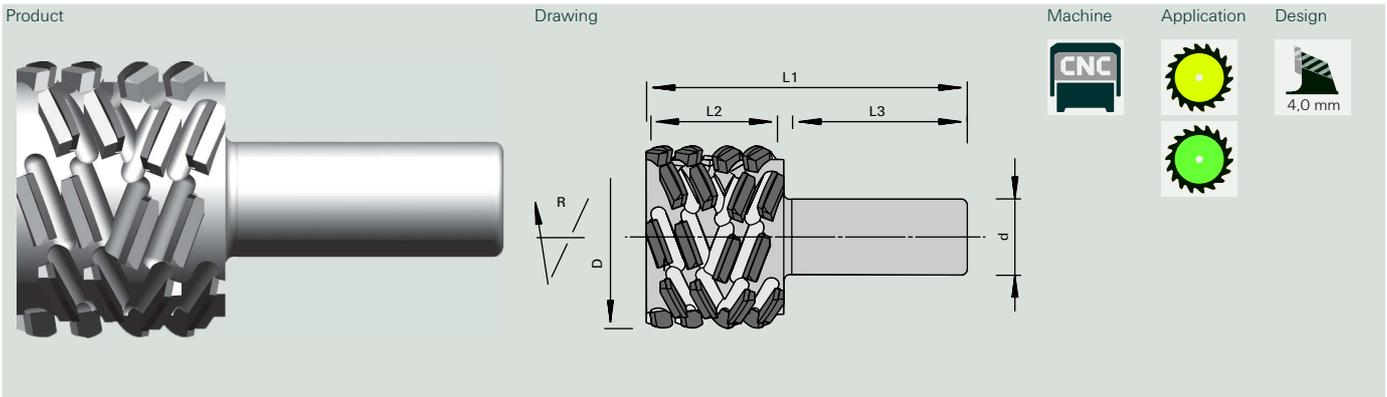
- adjust the tool to run centrally to the workpiece
- Tools with plunge tip must project at least 4,5 mm on bottom side of workpiece in order to bring p-System cutting edges into action. D 30 is without plunge tip
- for ramping or circular plunging only
- recommended feed rate per tooth: wood-based panels 0.3 - 0.35 mm, solid wood 0.15 - 0.2 mm
- clamping element: precision clamping element e.g. ps-System, TRIBOS
- with thread for length adjusting screw
- sense of rotation according to DIN-EN 50144

Product features

Order information

Ø D [mm]	L4 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	H [mm]		PU [pc.]	L	Order-No. [R]
20	3.8	29,5	25	55	110	1+1	26,5		1		50184380
25	3.8	48	25	55	130	2+2	45		1		50184384

# DP 3610 p-System High-Performance Jointing Shank-Type Cutters



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC stationary machines</li> <li>• for chip-free high-performance jointing of solid woods (free of knots) along and across the grain</li> <li>• for jointing of melamine-, paper-, HPL-laminated, foiled and veneered panels and lacquered surfaces</li> <li>• Finish-quality in the case of fiber materials such as fabric-laminated panels, linoleum with jute fibers, cork etc.</li> </ul>	<ul style="list-style-type: none"> <li>• symmetrical design</li> <li>• non-convex design</li> <li>• extremely scoring cut</li> <li>• resharping area 4 mm</li> </ul>	<ul style="list-style-type: none"> <li>• maximum cutting quality and edge lives</li> <li>• large depth of cut possible</li> <li>• chip-free cuts even on the exit side</li> <li>• perfectly suitable for laser-edge-technology</li> </ul>	<ul style="list-style-type: none"> <li>• with thread for length adjusting screw</li> <li>• recommended feed rate per tooth: wood-based panels 0.55 mm, solid wood 0.28 mm</li> <li>• crowned design on request</li> <li>• clamping element: precision clamping element e.g. ps-System, TRIBOS</li> <li>• sense of rotation according to DIN-EN 50 144</li> </ul>

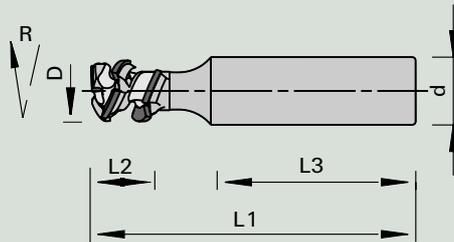
Product features						Order information			
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No. [R]
60	38	25	57.4	105	3+3	symmetrical	1	#	50184083

## DP 3620 p-System High-Performance Grooving Shank-Type Cutters

Product



Drawing



Machine



Application



Design



Machine / Application

- CNC stationary machines
- for grooves, cut outs, pockets and as forend cutter
- for chip-free high-performance grooving of solid woods (free of knots) along and across the grain
- for high-performance grooving of melamine-, paper-, HPL-laminated, foiled and veneered panels and lacquered surfaces
- Finish-quality in the case of fiber materials such as fabric-laminated panels, linoleum with jute fibers, cork etc.

Design

- extremely scoring cut
- resharpening area front 1.8 mm, peripheral side 2.4 mm

Advantages

- maximum cutting quality and edge lives
- chip-free cuts even on the exit side

Notes

- minimal grooving depth 0.5 mm
- as from 25 mm Z=2 is possible, bottom cutting edge is Z=1 always
- convex bottom cutting edge for better bottom quality of rabbet, however corner of rabbet not absolutely sharp
- for ramping or circular plunging only
- recommended feed rate per tooth: wood-based panels 0.3 - 0.35 mm, solid wood 0.15 - 0.2 mm
- clamping element: precision clamping element e.g. ps-System, TRIBOS, heat shrink-fit chuck
- with thread for length adjusting screw
- sense of rotation according to DIN-EN 50144

Product features

Order information

∅ D [mm]	L2 [mm]	∅ d [mm]	L3 [mm]	L1 [mm]	Z	Shear∠ [°]			PU [pc.]	L	Order-No. [R]
18	7,0	20	53	90	1+1	70			1		50184772
18	19	20	55	95	1+1	70			1		58185614 <b>NEW</b>

## HW 1594 Planing Cutters

Z=6

Product		Machine	Application	Design
				<div style="border: 1px solid black; padding: 2px;">HW TC05</div> <div style="border: 1px solid black; padding: 2px;">MAN</div> <div style="border: 1px solid black; padding: 2px;">MEC</div>

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machines</li> <li>• portable routers</li> <li>• for plain milling of top layers, edge bands, etc. on solid woods and wood-based materials</li> </ul>	<ul style="list-style-type: none"> <li>• cutting: HW-tipped, with side chamfer</li> <li>• manual feed</li> </ul>		

Product features						Order information				
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z			PU [pc.]	L	Order-No.
52	7	12	40	60	6			1	o	50811814

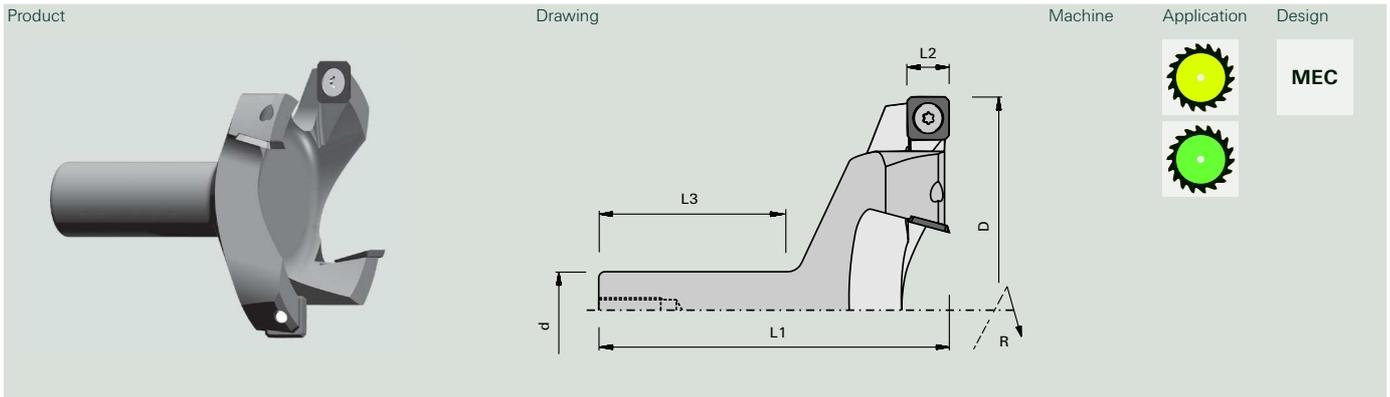
## DP 3508 Planing and Rabbeting Shank-Type Cutters

Product		Machine	Application	Design

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for planing, rabbeting and panel raising in wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>• cutting material: DP</li> <li>• resharpening area 3,5 mm</li> </ul>	<ul style="list-style-type: none"> <li>• high milling performance when dressing the workbench boards, e.g. with Nesting technology</li> <li>• smooth surface thanks to special cutting edge geometry</li> </ul>	<ul style="list-style-type: none"> <li>• with thread for length adjusting screw</li> <li>• sense of rotation according to DIN-EN 50144</li> </ul>

Product features						Order information				
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	nmax [min-1]		PU [pc.]	L	Order-No.
100	5,6	25	59,3	90	8	24000		1	s	50811708

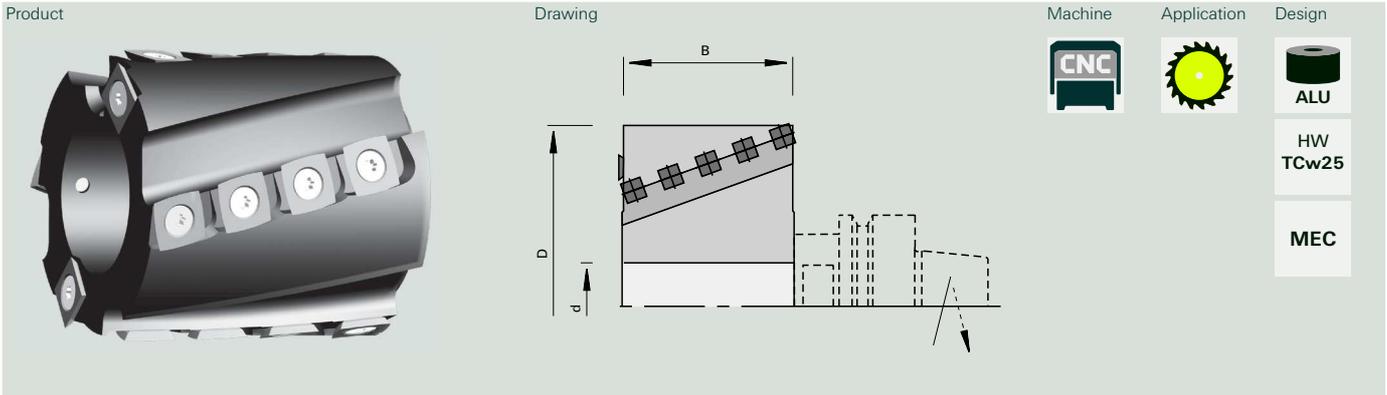
# HW 5572 Planing and Rabbeting Shank-Type Cutterhead



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• for planing, rabbeting and panel raising in wood-based materials</li> </ul>	<ul style="list-style-type: none"> <li>• cutting material: TC25</li> </ul>	<ul style="list-style-type: none"> <li>• high milling performance when dressing the workbench boards, e.g. with Nesting Technology</li> <li>• smooth surface thanks to special cutting edge geometry</li> </ul>	<ul style="list-style-type: none"> <li>• with thread for length adjusting screw</li> <li>• sense of rotation according to DIN-EN 50144</li> </ul>

Product features							Order information				
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	nmax [min-1]			PU [pc.]	L	Order-No.
100	14	25	55	96	4	15200			1		50811806
Turnover Knives			B [mm]	H [mm]	S [mm]				PU [pc.]	L	Order-No.
Profile Turnover Knives HW with 4 cutting edges and radius - Ledinek Rotoles			14	14	2.0				10		182441
Spare parts			Dimension [mm]						PU [pc.]		Order-No.
Screwdrivers with sliding handle for Torx			T20x100						1		166092
Countersunk Screws - with Torx			M5x6 T20						10		176199

# HW 5575 Spiral Cutterheads with HW turnover knife



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>stationary milling centers</li> <li>for dressing, rough-planing, jointing, rabbeting, copying of solid woods and laminated timber</li> </ul>	<ul style="list-style-type: none"> <li>with four-sided turnover knives, with rounded edges</li> <li>2 front spurs HW</li> <li>spiral cutting layout of turnover knives and cut division</li> <li>high-tensile aluminum body</li> </ul>	<ul style="list-style-type: none"> <li>easy hogging, low cutting pressure and low noise level</li> <li>high hogging volume</li> </ul>	<ul style="list-style-type: none"> <li>for HSK mounting arbors with double key without spacer</li> <li>for Ident-No. 58665 105 clamping length 50 mm with HSK63 mounting arbor 183748</li> <li>for Ident-No. 58665 106 clamping length 80 mm with HSK63 mounting arbor 183749</li> </ul>

Product features						Order information							
Ø D [mm]	B [mm]	Ø d [mm]	Z	n <sub>max</sub> [min-1]		PU [pc.]	L	Order-No.					
80	80	30	2+2+v2	18000		1		58665 105	NEW				
80	100	30	2+2+v2	18000		1	s	58665 106	NEW				
Turnover Knives						B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.	
Turnover Knives (with rounded edges R=150 mm)						15	15	2.5	TCw20	10		185274	NEW
Spare parts			Dimension [mm]			PU [pc.]	L	Order-No.					
Countersunk Screws			M5x15,5 T20			10		182112					
Screwdrivers			T20x100			1		166092					

# HW 5576 Jointing and rabbeting cutterheads mounted on mounting arbor HSK63F

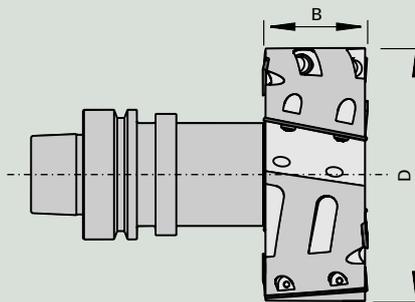
Product

Drawing

Machine

Application

Design



Machine / Application

- CNC milling machines
- for chip-free grooving and rabbeting in solid wood and wood-based materials
- for laminated, uncoated and glued solid wood and strongly wearing wood

Design

- with alternating shear angles for pulling cut
- cutting material: HW TC06
- Body made of high-tensile aluminum
- with 2 upper and 2 lower spurs each

Advantages

- optimum cutting quality

Notes

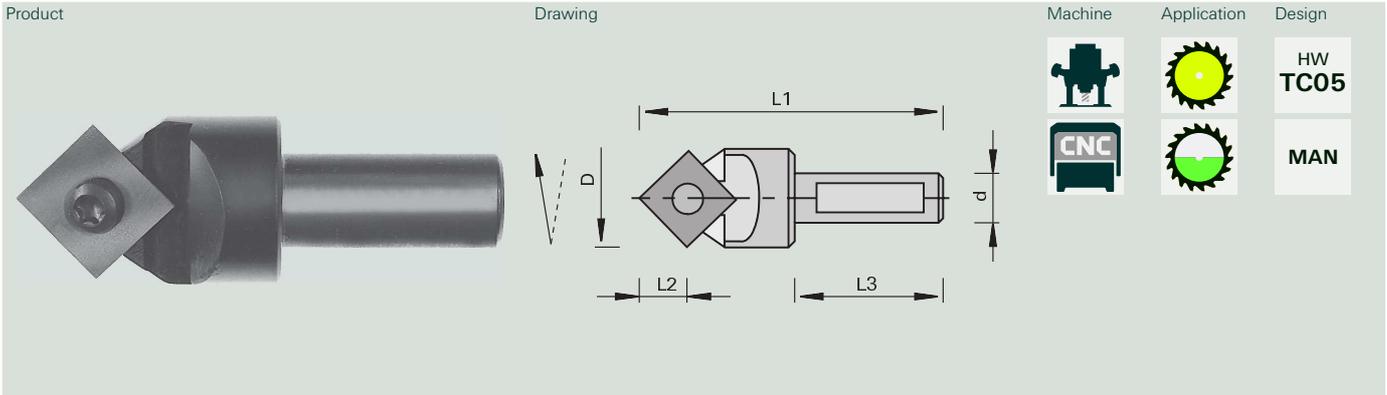
- mounted on mounting arbor HSK63F including spacer

Product features

Order information

Ø D [mm]	B [mm]	Ø d [mm]	Z	DKN [mm]	nmin-nmax [min-1]			PU [pc.]	L	Order-No. [L]		
125	50	30	2+2 V2+2	8x3	10600			1		58665108 <b>NEW</b>		
Turnover Knives						B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Spurs						14	14	2.0	TCw30	10		003079
Turnover knives						50	12	1.5	TC06	10		178289
Spare parts			Dimension [mm]						PU [pc.]	L	Order-No.	
5576 Jointing and rabbeting cutterhead			125x50x30 Z2+2 V2+2 DKN8x3						1		58665107 <b>NEW</b>	
Mounting arbors with HSK shank			Ø30x80xHSK 63F						1		183749	
Countersunk Screws			M5x6 T20						10		176199	
Round Head Screws			M3,5x12 T15						10		171067	
Spare parts			Dimension [mm]						PU [pc.]	L	Order-No.	
Screwdrivers			T15						1		163161	
Screwdrivers			T20x100						1		166092	

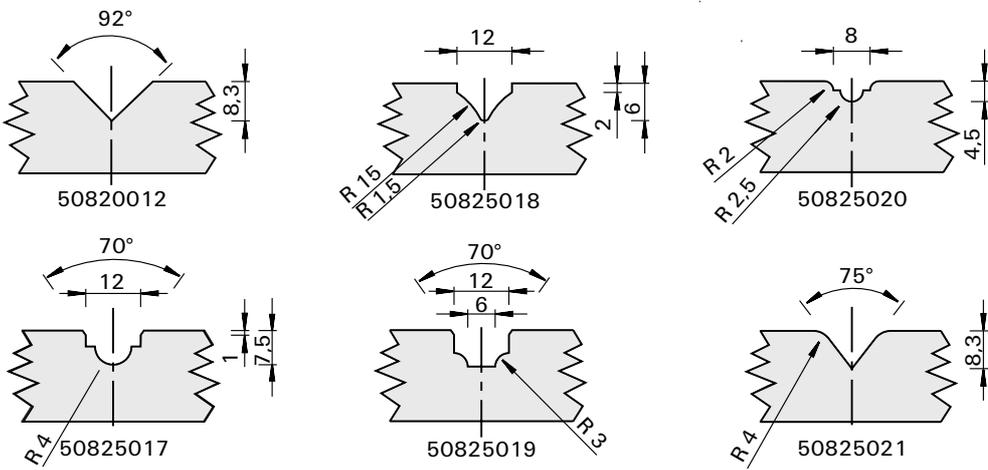
# HW 1591 Ornamental Groove Cutters with HW turnover knife



Machine	Application	Design
		HW TC05
		MAN

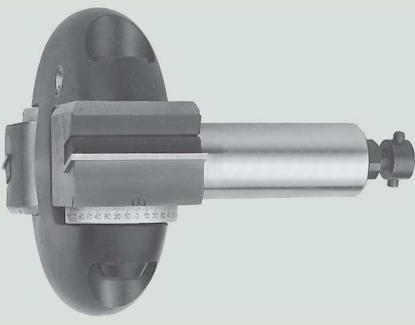
Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable routers</li> <li>CNC routers</li> <li>for cutting of ornamental grooves, inscriptions and engravings in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>with negative shear angle</li> <li>cutting material: HW TC05</li> </ul>	<ul style="list-style-type: none"> <li>chip-free cutting of laminated panels thanks to negative shear angle</li> </ul>	<ul style="list-style-type: none"> <li>clamping elements: ps-System, draw-in collet chuck</li> <li>included in delivery: Order-No. 58186880 cutter with TOK Order-No. 50820012 or "Set" Order-No. 50811728: 1 piece ornamental shank-type groove cutter Order-No. 50811713 and 2 pieces profile knives (Order-No. and drawing as pictured)</li> </ul>

Product features						Order information						
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z				PU [pc.]	L	Order-No.	
17	8,3	10	21	48	1				1	#	50811713	
									1	⊗	50811728	
17	8,3	10	40	67	1				1		58186880 <span style="color:red">NEW</span>	
Turnover Knives						B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Turnover Knives						12	12	1.5	TC05	10		50820012
Profile Knives HW						11	12	1.5	TC05	10	s	50825017
Profile Knives HW						11	12	1.5	TC05	10	s	50825018
Profile Knives HW						11	12	1.5	TC05	10	s	50825019
Profile Knives HW						12	12	1.5	TC05	10	s	50825020
Profile Knives HW						12	12	1.5	TC05	10	s	50825021
Spare parts		Dimension [mm]								PU [pc.]	L	Order-No.
Head Cap Screws		M3,5x6,5 T15								10		163223
Screwdrivers		T15								1		163161

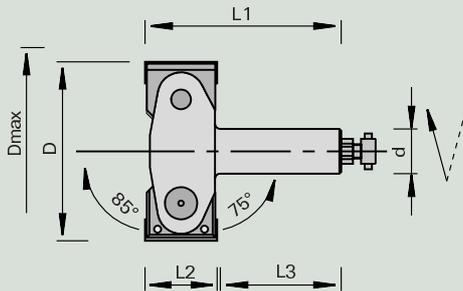


# HW 1581 Chamfering Cutterheads, pivoting

Product



Drawing



Machine



Application



Design

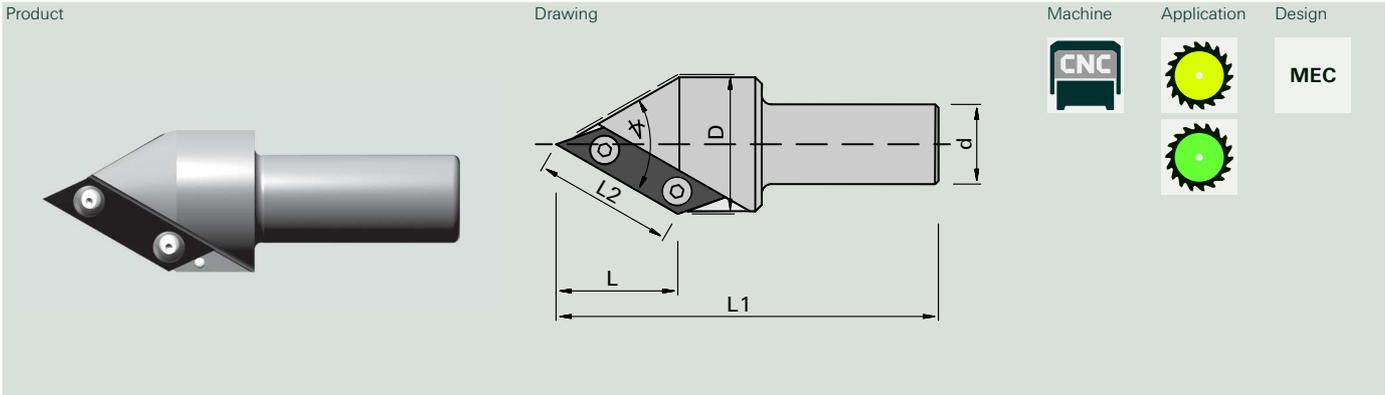
HW  
TC05

MEC

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC routers</li> <li>• routers</li> <li>• for jointing, chamfering and panel raising in solid woods and wood-based panels</li> <li>• for rabbeting with turnover knife Order-No. 50825010</li> </ul>	<ul style="list-style-type: none"> <li>• cutting edges parallel to cutter axis</li> <li>• cutting material: HW TC05</li> <li>• n max = 12,000 min-1</li> </ul>	<ul style="list-style-type: none"> <li>• universal application</li> </ul>	<ul style="list-style-type: none"> <li>• chamfer angle adjustable from 0-85 degrees on high-precision scale</li> <li>• for manual feed</li> <li>• clamping elements: ps-System, TRIBOS, draw-in collet chuck, MK2 directly into the spindle</li> </ul>

Product features							Order information						
Ø D [mm]	Ø Dmax [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z			PU [pc.]	L	Order-No.		
100	117	40	25	55	110	2			1		50811714		
Turnover Knives							B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Raker Turnover Knives							40	12	1.5	TC05	10		50820040
Spare parts			Dimension [mm]						PU [pc.]	L	Order-No.		
Safety Screws			M8x25						1		172113		
Safety Screws			M8x19						1		172921		
Screwdrivers			SW3x100						1		166090		

**HW 5573 Folding Chamfering Cutterhead**  
Z=1



Machine: 

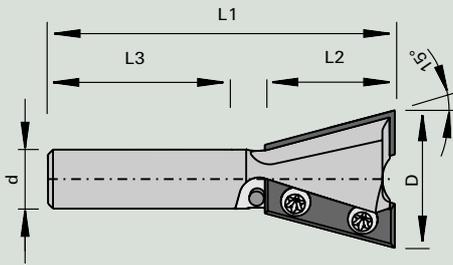
Application:   


Design: **MEC**

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC 5-axis routers</li> <li>• for picking of internal corners and for chamfering, for the cutting of ornamental grooves and folding cuts in solid wood and wood-based materials</li> </ul>	<ul style="list-style-type: none"> <li>• with shank</li> <li>• n max=15,000 min-1</li> </ul>		<ul style="list-style-type: none"> <li>• please order adapters separately</li> <li>• clamping elements: ps-System, TRIBOS, heat-shrinking chuck, draw-in collet chucks</li> </ul>

Product features							Order information			
Wedge $\sphericalangle$ [°]	$\varnothing D$ [mm]	L2 [mm]	$\varnothing d$ [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	Order-No.	
60	41.5	41.3	25	55	118	1		1	50811807	
Turnover Knives				B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Turnover Knives HW with 2 cutting edges, edge bevel for scribing cutters				50	12	1.5		10		185140
Spare parts		Dimension [mm]					PU [pc.]	L	Order-No.	
Round Head Screws		M3,5x4 T15					10		168893	
Screwdrivers		T15					1		163161	

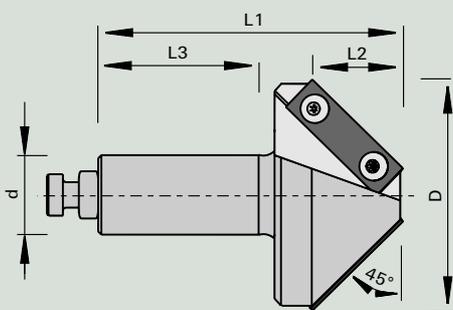
## HW 1521 Dovetail Cutterheads with chamfer angle 15°

Product	Drawing	Machine	Application	Design			
				<table border="1"> <tr><td>HW TCw05</td></tr> <tr><td>MAN</td></tr> <tr><td>MEC</td></tr> </table>	HW TCw05	MAN	MEC
HW TCw05							
MAN							
MEC							

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable routers</li> <li>CNC machines</li> <li>milling of dovetail connections and for special work during Corian® processing</li> <li>for chamfering of 15°</li> </ul>	<ul style="list-style-type: none"> <li>body with 2 HW turnover knives with chamfer on both sides</li> <li>stop pin for a trouble-free knife change</li> <li>for manual and mechanical feed</li> <li>chamfer 15°</li> </ul>		

Product features							Order information						
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No.				
28	26	12	40	70	2		1	o	50811817				
Turnover Knives							B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Turnover Knives							27	9	1.5	TCw05	10	o	50811818

## HW 1522 Chamfering Cutterheads Z=2

Product	Drawing	Machine	Application	Design		
				<table border="1"> <tr><td>HW TC05</td></tr> <tr><td>MEC</td></tr> </table>	HW TC05	MEC
HW TC05						
MEC						

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>conventional routers</li> <li>CNC machines</li> <li>for chamfering of wood-based materials and panel materials</li> </ul>	<ul style="list-style-type: none"> <li>body with 2 HW turnover knives</li> <li>peripheral cutting only</li> <li>chamfer 45°</li> <li>mechanical feed</li> </ul>		

Product features							Order information						
Ø D [mm]	Ø D1 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	PU [pc.]	L	Order-No.				
74	17	28	25	55	95	2	1	o	50811819				
Turnover Knives							B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Turnover Knives							50	12	1.5	TC05	10		50820050

## HW 1520 Cutters for recessed grips

Z=2

Product		Machine	Application	Design				
				<table border="1"> <tr><td>HW</td></tr> <tr><td>TC05</td></tr> <tr><td>MAN</td></tr> <tr><td>MEC</td></tr> </table>	HW	TC05	MAN	MEC
HW								
TC05								
MAN								
MEC								

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for cutting of hidden handle bars in solid woods, wood-based materials, and panels</li> <li>in a single operation, the complete handle bar on the drawer front and the door edges can be manufactured</li> </ul>	<ul style="list-style-type: none"> <li>two axially parallel cutting edges</li> <li>peripheral cutting and face cutting</li> <li>righthand rotation</li> <li>manual feed</li> </ul>		<ul style="list-style-type: none"> <li>other shank diameters upon request</li> </ul>

Product features								Order information			
Ø D [mm]	R1 [mm]	R2 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No.
19	2.5	5	14,5	12	25	60	2		1	o	50811815
38	2.5	6	18	12	25	63	2		1	o	50811816

## HW 1593 V Groove Letter Cutters

Z=3

Product		Machine	Application	Design			
				<table border="1"> <tr><td>HW</td></tr> <tr><td>TC05</td></tr> <tr><td>MAN</td></tr> </table>	HW	TC05	MAN
HW							
TC05							
MAN							

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable routers</li> <li>CNC machines</li> <li>for milling of V grooves, ornamental grooves, letters and for chamfering of hard wood, wood-based materials and panels</li> </ul>	<ul style="list-style-type: none"> <li>solid carbide cutters with 3 HW cutting edges</li> <li>righthand rotation</li> <li>manual feed</li> </ul>		<ul style="list-style-type: none"> <li>cutter with angle 90°, suitable for countersinking of bores</li> </ul>

Product features							Order information				
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	∠ [°]	L1 [mm]	Z		PU [pc.]	L	Order-No.	
14	16,5	12	25	60	62.5	3		1	o	50811812	
14	12,5	12	25	90	62.5	3		1	o	50811813	

# HW 1523 Rounding Chamfering Cutterheads Set Z=2

Set in a wooden box

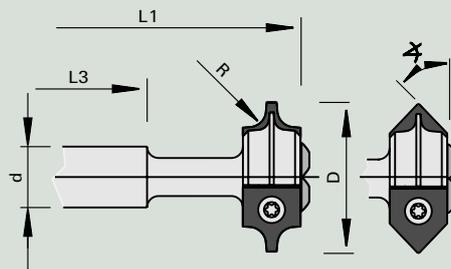
Product

Drawing

Machine

Application

Design



HW  
TC05

MEC

Machine / Application

Design

Advantages

Notes

- CNC machines
- for rounding of one or both sides and chamfering of panel materials

- body with 2 HW turnover knives
- righthand rotation
- mechanical feed

- in the same body, the rounding knives with different radii or chamfering knives 45° can be used.

Product features

Order information

	Ø D1 [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	Type		PU [pc.]	L	Order-No.
1 body size 1 2 pieces of each rounding knife R2 / R3 / R4 / R5 2 chamfering knives 45°	27	6	16	60	100	2	Set 1		1	o	50811820
1 body size 2 2 pieces of each rounding knife R6 / R8 / R10 / R12 2 chamfering knives 45°	47.8	9	20	55	120	2	Set 2		1	o	50811821

Turnover Knives		B [mm]	H [mm]	S [mm]	Cutting material		PU [pc.]	L	Order-No.
Rounding knives	R= 2 mm	15	18	2.0	TC05		6	o	50811822
Rounding knives	R= 3 mm	15	18	2.0	TC05		6	o	50811823
Rounding knives	R= 4 mm	15	18	2.0	TC05		6	o	50811824
Rounding knives	R= 5 mm	15	18	2.0	TC05		6	o	50811825
Chamfering turnover knives	Chamfer 45°	15	18	2.0	TC05		6	o	50811826
Rounding knives	R= 6 mm	30	25	2.0	TC05		6	o	50811827
Rounding knives	R= 8 mm	30	25	2.0	TC05		6	o	50811828
Rounding knives	R= 10 mm	30	25	2.0	TC05		6	o	50811829
Rounding knives	R= 12 mm	30	25	2.0	TC05		6	o	50811830
Chamfering turnover knives	Chamfer 45°	30	25	2.0	TC05		6	o	50811831

# HW 1524 Handrail cutterheads

Z=2+2

Product Drawing Machine Application Design

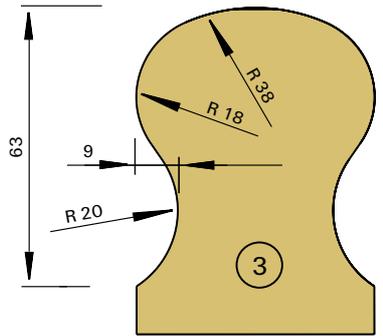
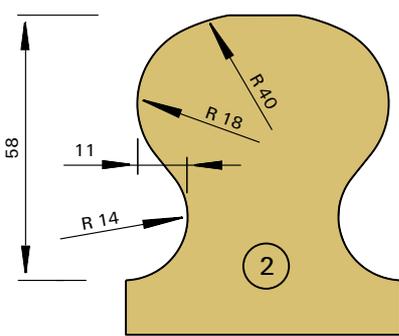
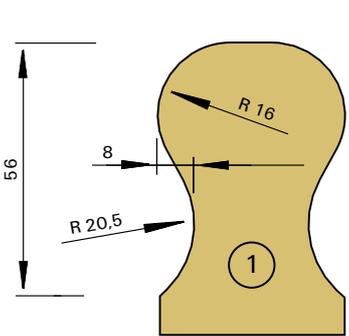
CNC Application Design

HW TCw05

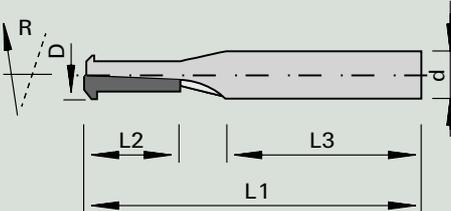
MEC

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machines</li> <li>• for profiling of handrails for stairs and railings made of solid wood</li> </ul>	<ul style="list-style-type: none"> <li>• body with 2+2 HW turnover knives</li> <li>• with shear angle</li> <li>• peripheral cutting and face cutting</li> <li>• mechanical feed</li> </ul>		

Product features							Order information				
Profile	Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z		PU [pc.]	L	Order-No.	
1	90	76	20	62	145	2+2		1	o	50811832	
2	90	76	20	59	145	2+2		1	o	50811833	
3	90	76	20	63	145	2+2		1	o	50811834	
Turnover Knives				Profile	B [mm]	H [mm]	S [mm]	Cutting material	PU [pc.]	L	Order-No.
Profile Knives KB450				1 oben	40	25	2.0	TCw05	2	o	50811835
Profile Knives KB374				1 unten	40	50	2.0	TCw05	2	o	50811836
Profile Knives KB450				2 oben	40	50	2.0	TCw05	2	o	50811837
Profile Knives KB374				2 unten	40	25	2.0	TCw05	2	o	50811838
Profile Knives KB450				3 oben	40	25	2.0	TCw05	2	o	50811839
Profile Knives KB374				3 unten	40	50	2.0	TCw05	2	o	50811840



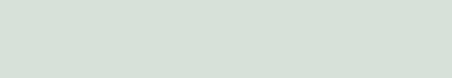
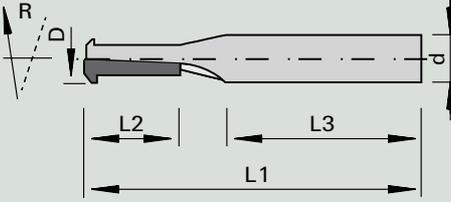
## HW 3512 Profile Grooving Shank-Type Cutters HW - for Lamello Clamex P®

Product	Drawing	Machine	Application	Design
				

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• 5-axis CNC machines</li> <li>• for the milling of Lamello Clamex P® profile grooves</li> <li>• particularly for profile grooves to be cut into the panel surface further away from the panel edge and if the housing of the angular aggregate does not allow the use of Lamello Clamex P® bore type tool</li> </ul>	<ul style="list-style-type: none"> <li>• HW-tipped</li> <li>• disposable tool</li> </ul>	<ul style="list-style-type: none"> <li>• problem solution if space problems occur with angular aggregates (touching of the panel with the aggregate's bottom side when using bore-type cutters with <math>D\varnothing 100.4</math> mm)</li> </ul>	<ul style="list-style-type: none"> <li>• depending on the type of work-piece, a pre-grooving operation with a negative solid carbide finishing spiral cutter can make sense (reduced risk of chipping of sensitive laminations) resp. reduces the cutting pressure when milling the profile grooves</li> </ul>

Product features						Order information				
$\varnothing D$ [mm]	L2 [mm]	$\varnothing d$ [mm]	L3 [mm]	L1 [mm]	Z			PU [pc.]	L	Order-No. [L]
10	20	10	40	70	1			1		50811810

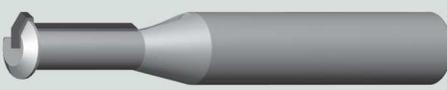
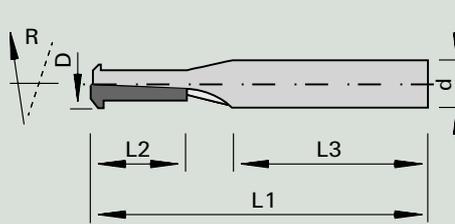
## VHW 3519 Profile Grooving Shank-Type Cutters VHW - for Lamello Clamex P®

Product	Drawing	Machine	Application	Design
				

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• 5-axis CNC machines</li> <li>• for the milling of Lamello Clamex P® profile grooves</li> <li>• particularly for profile grooves to be cut into the panel surface further away from the panel edge and if the housing of the angular aggregate does not allow the use of Lamello Clamex P® bore type tool</li> </ul>	<ul style="list-style-type: none"> <li>• Massive solid tungsten carbide</li> <li>• Spiral design Z=2</li> <li>• TC 104 topcoat coating</li> <li>• Disposable tool</li> <li>• Not resharpenable</li> </ul>	<ul style="list-style-type: none"> <li>• High rigidity = low vibration even with difficult materials</li> <li>• Low cutting pressure and good cutting quality thanks to spiral design</li> <li>• Hard coating and additionally low coefficient of friction for longer edge life</li> </ul>	

Product features						Order information				
$\varnothing D$ [mm]	L2 [mm]	$\varnothing d$ [mm]	L3 [mm]	L1 [mm]	Z			PU [pc.]	L	Order-No. [L]
9.8	23	12	36	80	2			1		58186879 <span style="color: red; font-weight: bold;">NEW</span>

## DP 3518 Profile Grooving Shank-Type Cutters DP - for Lamello Clamex P®

<p>Product</p> 	<p>Drawing</p> 	<p>Machine</p> 	<p>Application</p> 	<p>Design</p> <p>MEC</p>
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Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• 5-axis CNC machines</li> <li>• for the milling of Lamello Clamex P® profile grooves</li> <li>• particularly for profile grooves to be cut into the panel surface further away from the panel edge and if the housing of the angular aggregate does not allow the use of Lamello Clamex P® bore type tool</li> </ul>	<ul style="list-style-type: none"> <li>• DP-tipped</li> <li>• disposable tool</li> </ul>	<ul style="list-style-type: none"> <li>• problem solution if space problems occur with angular aggregates (touching of the panel with the aggregate's bottom side when using bore-type cutters with DØ100.4 mm)</li> </ul>	<ul style="list-style-type: none"> <li>• depending on the type of work-piece, a pre-grooving operation with a negative solid carbide finishing spiral cutter can make sense (reduced risk of chipping of sensitive laminations) resp. reduces the cutting pressure when milling the profile grooves</li> </ul>

Product features						Order information			
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	PU [pc.]	L	Order-No. [L]	
10	20	12	40	70	1		1	58185703 	

# DRILL BITS

## CONTENTS

Through-hole bits

4-1

Dowel bits

4-5

Cylinder boring bit

4-11

Countersink

4-13

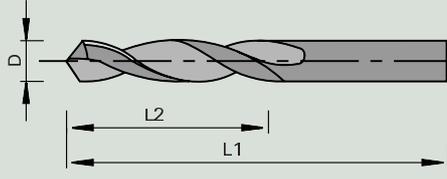


# VHW 2010 Twist Drills

Product



Drawing



Machine




Application



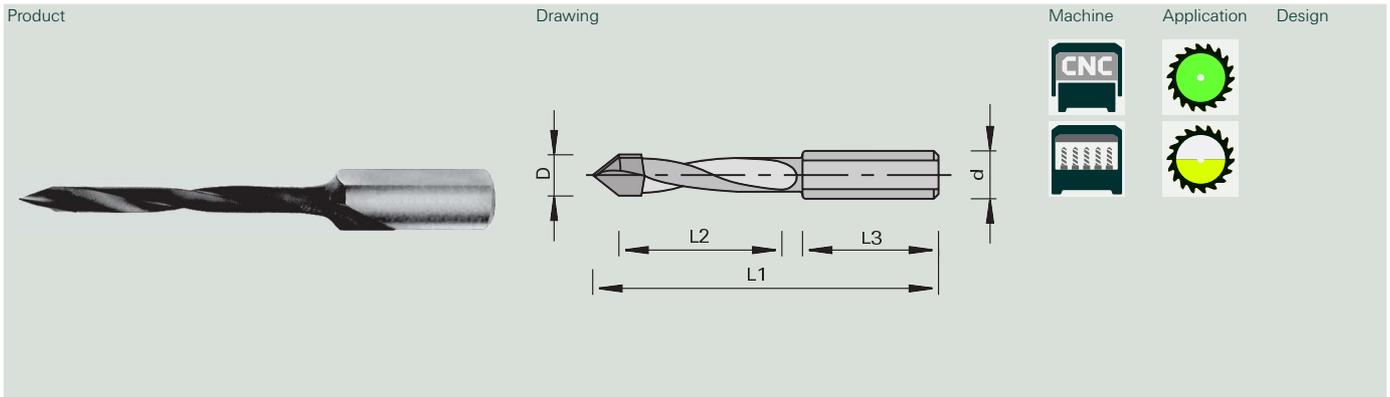

Design



<p>Machine / Application</p> <ul style="list-style-type: none"> <li>• portable boring machines</li> <li>• automatic boring machines</li> <li>• CNC machining centers</li> <li>• for drilling of through holes and dowel holes in solid woods and wood-based panels</li> </ul>	<p>Design</p> <ul style="list-style-type: none"> <li>• 2 v-point cutting edges</li> <li>• solid carbide design</li> <li>• cutting <math>\varnothing</math> = shank <math>\varnothing</math></li> <li>• tip angle 120°</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>• high feed rates possible</li> <li>• large resharpenable area</li> </ul>	<p>Notes</p> <ul style="list-style-type: none"> <li>• clamping elements: draw-in collet chuck, drill chuck</li> </ul>
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Product features			Order information				
Ø D [mm]	L2 [mm]	L1 [mm]			PU [pc.]	L Order-No. [L]	L Order-No. [R]
2.0	25	50			1	50600740	50600741
2.5	27	55			1	50600742	50600743
3.0	27	55			1	50600744	50600745
3.5	27	52			1	50600748	50600749
4.0	27	55			1	50600750	50600751
5.0	28	60			1	50600752	50600753

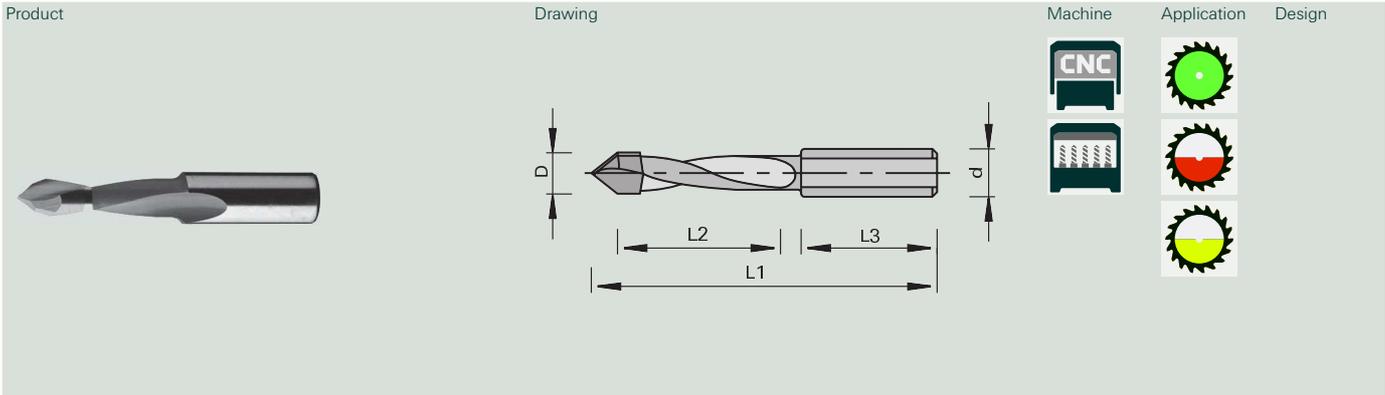
# HW 2020 Through-Hole Bits



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for drilling of through-holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>2 v-point cutting edges (60 degree angle)</li> <li>HW-tipped</li> <li>cylindrical shank with clamping surface</li> <li>spiral without back guide</li> </ul>		<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
5.0	25	10	25	57.5		1		50600132		50600133
6.0	25	10	25	57.5		1		50600144		50600145
8.0	22	10	25	57.5		1		50600134		50600135
5.0	35	10	25	70		1		50600136		50600137
6.0	35	10	25	70		1		50600318		50600319
8.0	35	10	25	70		1		50600138		50600139
5.0	45	10	25	77		1		50600324		50600325
8.0	43	10	25	77		1		50600326		50600327

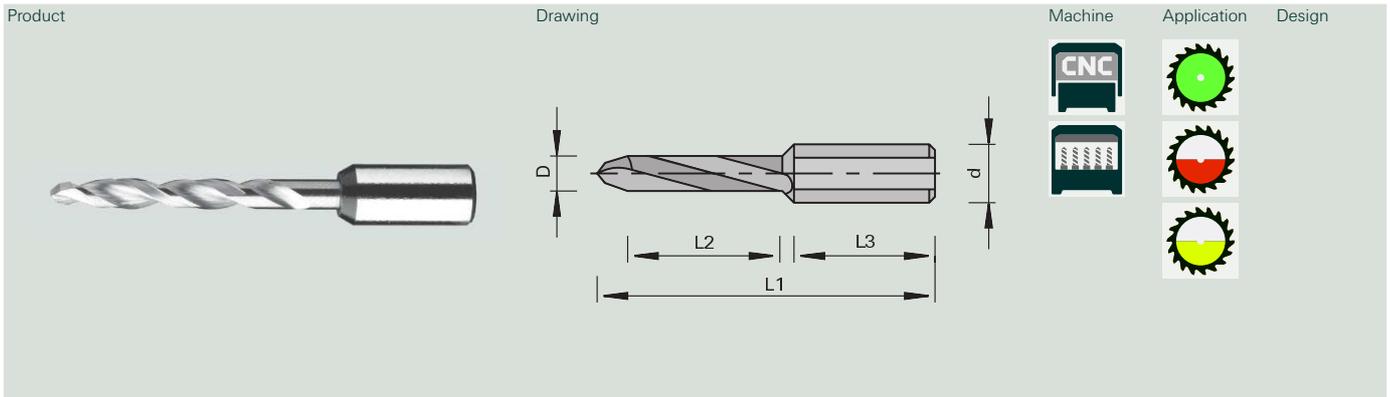
# HW 2021 Through-Hole Bits



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for chip-free drilling of through-holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>special cutting edge geometry</li> <li>HW-plunging tip made from super-fine grain material</li> </ul>	<ul style="list-style-type: none"> <li>chip-free hole edges thanks to special cutting edge geometry</li> <li>long edge lives thanks to HW plunging tip</li> <li>high process safety thanks to constant quality of the bores for a long time</li> </ul>	<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
5.0	27	10	26	57.5		1		50600370		50600371
5.0	35	10	26	70		1		50600372		50600373
8.0	35	10	26	70		1		50600374		50600375
10.0	35	10	26	70		1		50183692		50183693 <span style="color: red; font-weight: bold;">NEW</span>

# VHW 2022 Through-Hole Bits

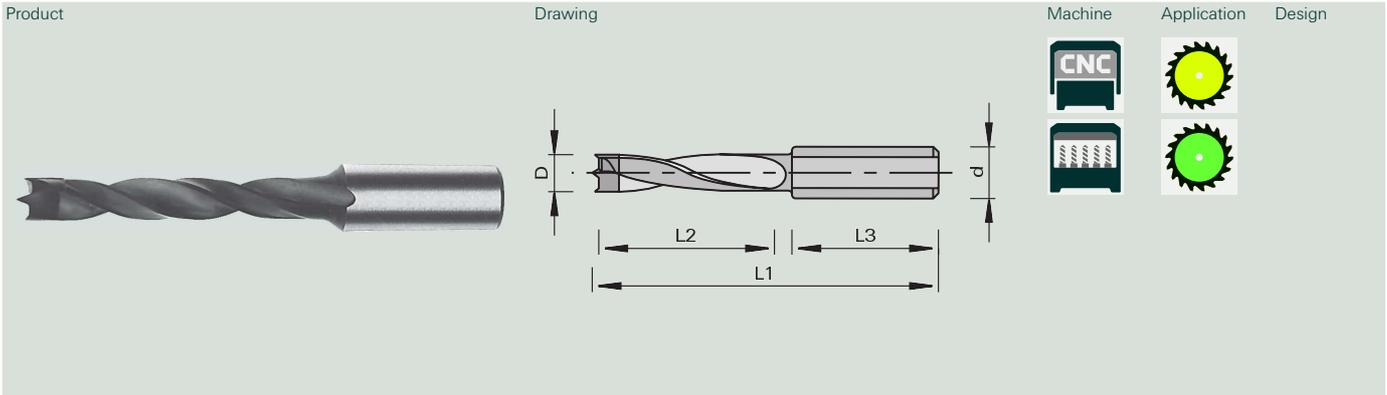


Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for chip-free drilling of through-holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>special cutting edge geometry</li> <li>boring part made from fine-grain solid tungsten carbide</li> </ul>	<ul style="list-style-type: none"> <li>chip-free hole edges thanks to special cutting edge geometry</li> <li>high feed rates and edge lives increased up to sixfold compared to traditional through-hole drills thanks to solid carbide design</li> <li>high process safety thanks to constant quality of the bores for a long time</li> </ul>	<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 included in delivery</li> <li>through-hole bit with shank length L3=22 mm is not suitable for Weeke adjusting screw</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
3.0	27	10	30	70		1		50600588		50600376
4.0	35	10	24	70		1		50600451		50600450
5.0	35	10	24	70		1		50600590		50600378
6.0	35	10	50	100	for Lamello Clamex P®	1				50600380
8.0	40	10	22	70		1		50600591		50600379

# HW 2031 Dowel Bits

With back-guide



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for chip-free drilling of dowel holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>2 negative spurs</li> <li>centering point</li> <li>spiral with back-guide</li> <li>plastic coated</li> <li>HW-tipped</li> </ul>	<ul style="list-style-type: none"> <li>chip-free hole edges thanks to negative spurs</li> <li>safe drilling thanks to centering point</li> <li>protection of the hole edge upon exiting thanks to spiral with back guide</li> <li>optimum chip evacuation thanks to plastic coating</li> </ul>	<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>adjustable countersink attachment on the boring spiral for simultaneous chamfering of the hole</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information				
$\varnothing D$ [mm]	L2 [mm]	$\varnothing d$ [mm]	L3 [mm]	L1 [mm]	PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
5.0	30	10	19	57.5	1		50600174		50600175
6.0	30	10	20	57.5	1		50600176		50600177
8.0	30	10	20	57.5	1		50600178		50600179
10	30	10	20	57.5	1		50600180		50600181
12	30	10	20	57.5	1	o	50600182		50600183

# HW 2032 Dowel Bits

Without back-guide

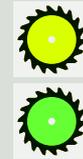
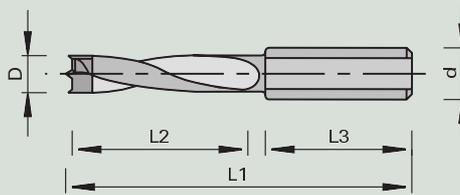
Product

Drawing

Machine

Application

Design



Machine / Application

- portable boring machines
- automatic boring machines
- CNC machining centers
- for chip-free drilling of dowel holes in solid woods and wood-based panels

Design

- 2 negative spurs
- centering point
- spiral without back guide
- plastic coated
- HW-tipped

Advantages

- chip-free hole edges thanks to negative spurs
- safe drilling thanks to centering point
- optimum chip evacuation thanks to plastic coating

Notes

- adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery
- adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately
- clamping elements: combi chuck, quick-change chuck

Product features

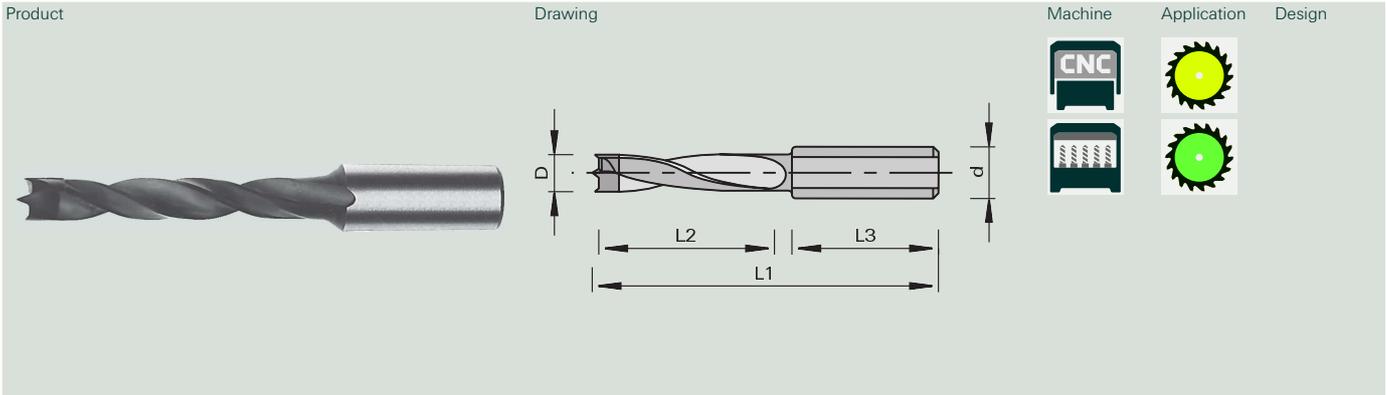
Order information

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]						PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
4.0	27	10	27	57.5						1		50600100		50600101
5.0	27	10	27	57.5						1		50600102		50600103
6.0	27	10	27	57.5						1		50600104		50600105
8.0	27	10	27	57.5						1		50600108		50600109
8.2	27	10	27	57.5						1		50600198		50600199
9.0	27	10	27	57.5						1		50600110		50600111
10	27	10	27	57.5						1		50600112		50600113
12	27	10	27	57.5						1		50600114		50600115
4.0	35	10	30	70						1		50600162		50600163
5.0	35	10	30	70						1		50600116		50600117
6.0	35	10	30	70						1		50600118		50600119
7.0	35	10	30	70						1		50600120		50600121
8.0	35	10	30	70						1		50600122		50600123
9.0	35	10	30	70						1		50600124		50600125
10	35	10	30	70						1		50600126		50600127
11	35	10	30	70						1		50600128		50600129
12	35	10	30	70						1		50600130		50600131

HW

## 2033 Dowel Bits

Long design with back-guide

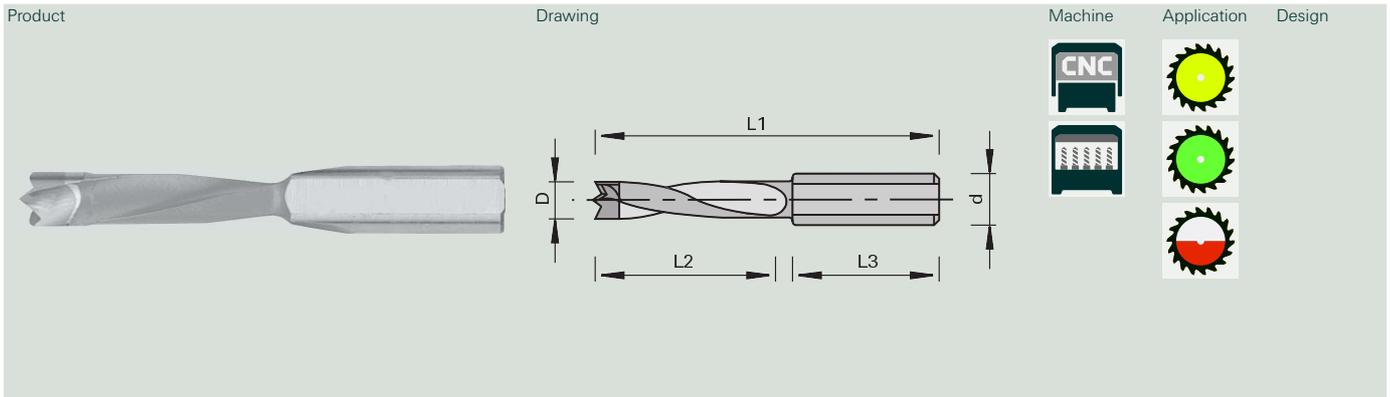


Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for chip-free drilling of dowel holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>long cutting length</li> <li>2 negative spurs</li> <li>centering point</li> <li>spiral with back-guide</li> <li>plastic coated</li> <li>HW-tipped</li> </ul>	<ul style="list-style-type: none"> <li>deep holes thanks to long cutting length</li> <li>chip-free hole edges thanks to negative spurs</li> <li>safe drilling thanks to centering point</li> <li>protection of the hole edge upon exiting thanks to spiral with back guide</li> <li>optimum chip evacuation thanks to plastic coating</li> </ul>	<ul style="list-style-type: none"> <li>adjustable countersink attachment on the boring spiral for simultaneous chamfering of the hole</li> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
5.0	50	10	30	85		1		50600249		50600250
8.0	50	10	30	85		1	o	50600251		50600252
10	50	10	30	85		1		50600253		50600254
7.0	65	10	30	105		1		50600255		50600256
8.0	65	10	30	105		1		50600257		50600258
10	65	10	30	105		1		50600259		50600260

# HW 2040 Dowel Bits

With special tooth geometry

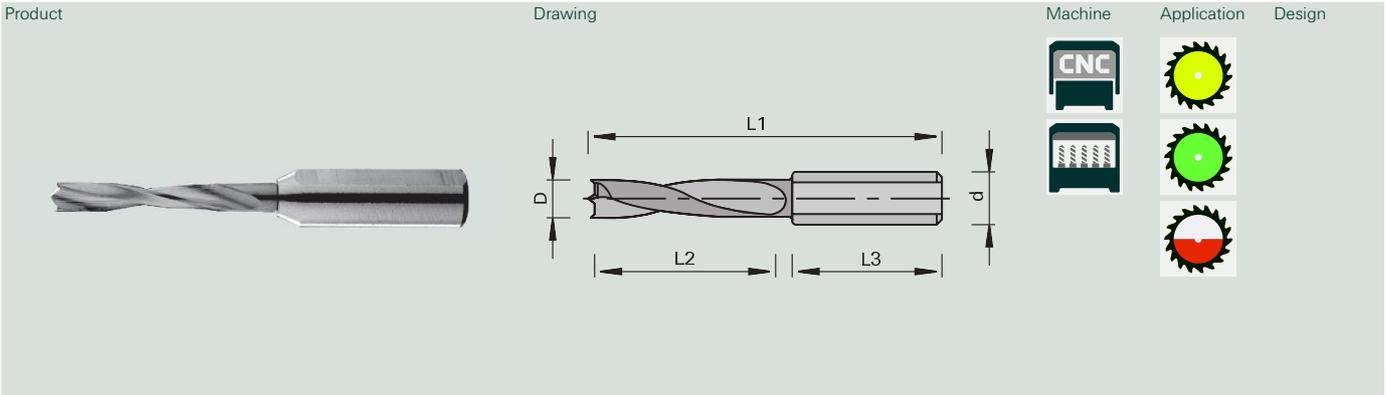


Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for chip-free drilling of dowel holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>special cutting edge geometry</li> <li>2 spurs</li> <li>centering point</li> <li>HW-tipped</li> </ul>	<ul style="list-style-type: none"> <li>chip-free hole edges thanks to special cutting edge geometry with spurs</li> <li>safe drilling thanks to centering point</li> <li>high process safety thanks to constant quality of the bores for a long time</li> <li>tool life increased up to sixfold compared to traditional dowel bits thanks to wear-resistant HW plunging tip</li> </ul>	<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
5.0	25	10	27	57.5		1		50600640		50600641
6.0	25	10	27	57.5		1		50600642		50600643
8.0	25	10	27	57.5		1		50600644		50600645
10	25	10	27	57.5		1		50600646		50600647
5.0	35	10	30	70		1		50600648		50600649
6.0	35	10	30	70		1		50600650		50600651
8.0	35	10	30	70		1		50600652		50600653
10	35	10	30	70		1		50600654		50600655

# VHW 2041 Dowel Bits

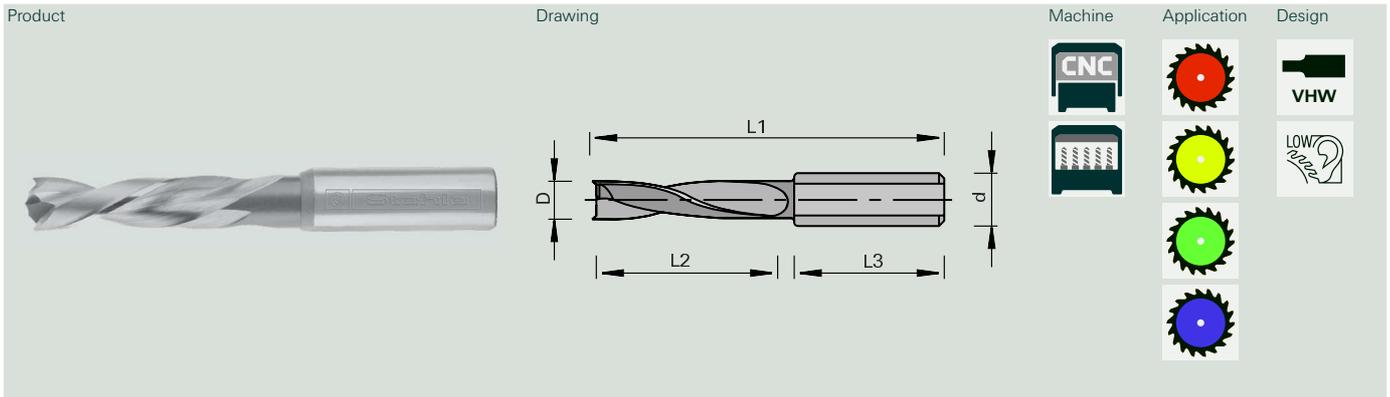
With special tooth geometry



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for chip-free drilling of dowel holes in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>special cutting edge geometry</li> <li>2 spurs</li> <li>centering point</li> <li>boring part made from fine-grain solid tungsten carbide</li> </ul>	<ul style="list-style-type: none"> <li>chip-free hole edges thanks to special cutting edge geometry with spurs</li> <li>safe drilling thanks to centering point</li> <li>high feed rates and edge lives increased up to sixfold compared to traditional dowel bits thanks to solid carbide design</li> <li>high process safety thanks to constant quality of the bores for a long time</li> </ul>	<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 55 1 included in delivery</li> <li>dowel bit with shank length L3=22 mm is not suitable for Weeke adjusting screw</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> </ul>

Product features					Order information					
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
3.0	18	10	31	57.5		1		50600261		50600262
4.0	20	10	29	57.5		1	s	50600453	s	50600452
5.0	22	10	27	57.5		1		50600263		50600264
3.0	18	10	43.5	70		1		50600267		50600268
4.0	27	10	34.5	70		1		50600455		50600456
5.0	30	10	31.5	70		1		50600269		50600270
6.0	30	10	30	70		1	o	50600271		50600272
8.0	35	10	22	70		1		50600273		50600274

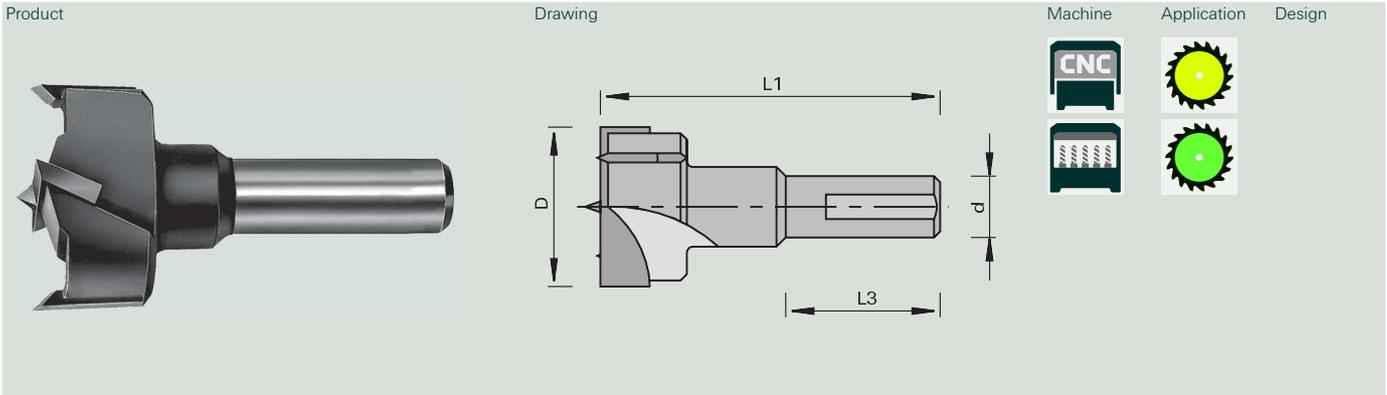
# VHW 2042 High-Performance Dowel Bits



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>stationary boring machines</li> <li>automatic boring machines</li> <li>CNC machining centers</li> <li>for drilling of through holes and dowel holes in solid woods, wood-based panels and composite materials</li> </ul>	<ul style="list-style-type: none"> <li>special cutting edge geometry</li> <li>2 spurs</li> <li>spiral with back-guide</li> <li>boring part made from solid tungsten carbide</li> </ul>	<ul style="list-style-type: none"> <li>special tooth geometry and spurs for minimal cutting force and cutting pressure</li> <li>protection of the hole edge upon exiting thanks to spiral with back guide</li> <li>high feed rates and large resharpenable area thanks to solid carbide bit</li> </ul>	<ul style="list-style-type: none"> <li>adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>clamping elements: combi chuck, quick-change chuck</li> <li>tooth geometry applied for patent</li> <li>change of grinding or reduction of diameter ist not possible</li> </ul>

Product features					Order information							
Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]				PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
5.0	36	10	30	70				1		50600691		50600690
6.0	36	10	30	70				1		50600693		50600692
8.0	36	10	30	70				1		50600695		50600694
10	36	10	30	70				1		50600697		50600696

# HW 2050 Cylinder Boring Bits

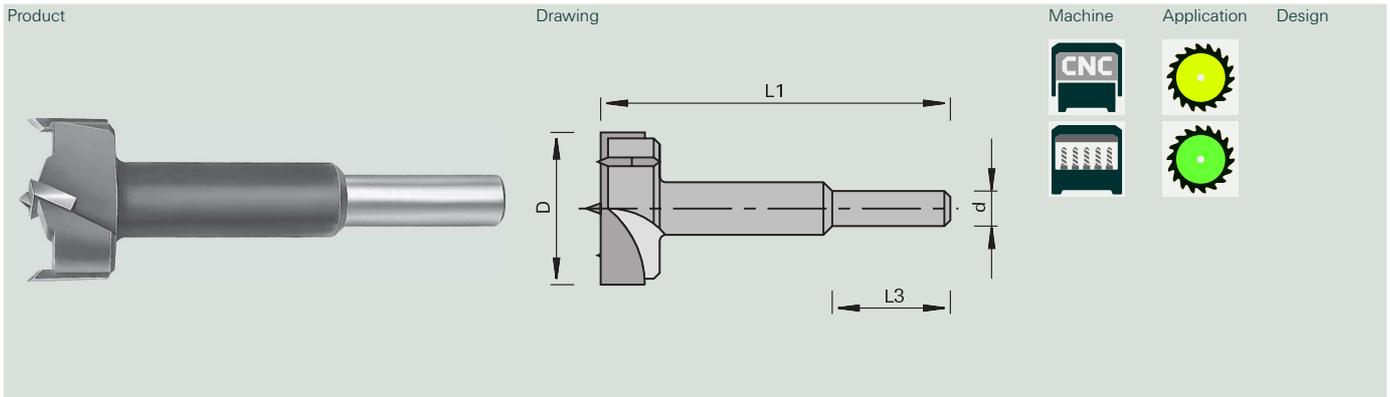


<p><b>Machine / Application</b></p> <ul style="list-style-type: none"> <li>• hardware hinge machines</li> <li>• automatic boring machines</li> <li>• CNC machining centers</li> <li>• for chip-free drilling of hinge hardware holes in solid woods and wood-based panels</li> </ul>	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>• 2 rakers, 2 spurs and centering point</li> <li>• HW-tipped</li> </ul>	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>• chip-free holes thanks to scoring cut of the spurs</li> </ul>	<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>• cylindrical shank with clamping surface</li> <li>• adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>• adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>• clamping elements: combi chuck, quick-clamping chuck</li> </ul>
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Product features				Order information				
Ø D [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
15	10	26	57.5	1		50600500		50600501
16	10	26	57.5	1		50600502		50600503
18	10	26	57.5	1		50600504		50600505
20	10	26	57.5	1		50600506		50600507
22	10	26	57.5	1		50600508		50600509
25	10	26	57.5	1		50600510		50600511
26	10	26	57.5	1		50600512		50600513
30	10	26	57.5	1		50600514		50600515
35	10	26	57.5	1		50600516		50600517
40	10	26	57.5	1		50600687		50600688
15	10	26	70	1		50600530		50600531
20	10	26	70	1		50600532		50600533
25	10	26	70	1		50600534		50600535
26	10	26	70	1		50600536		50600537
30	10	26	70	1		50600538		50600539
35	10	26	70	1		50600540		50600541

# HW 2051 Cylinder Boring Bits

Long cutting length

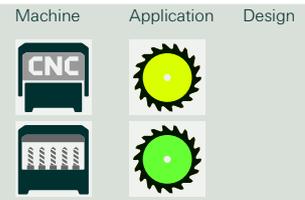
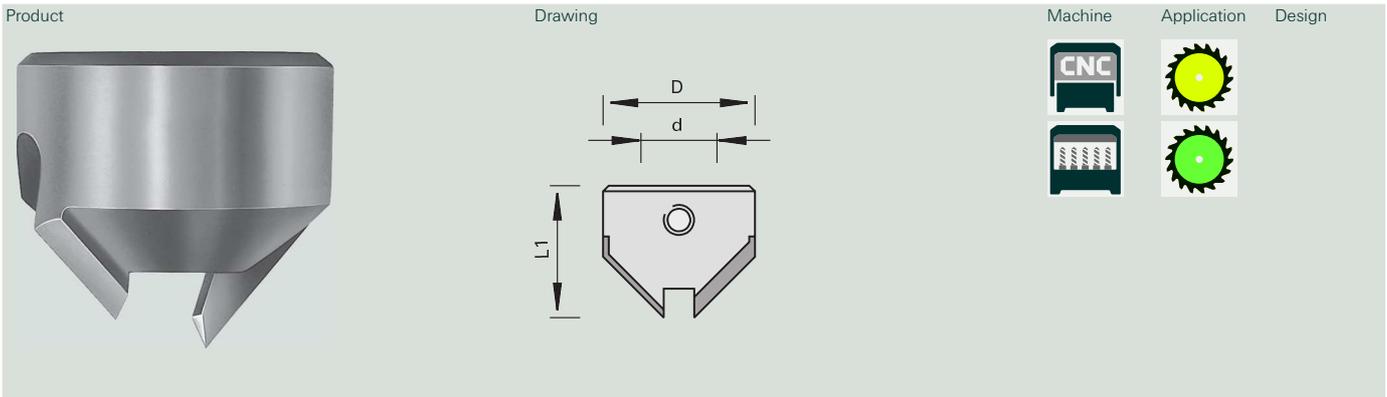


Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable boring machines</li> <li>for chip-free drilling in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>2 rakers, 2 spurs and centering point</li> <li>HW-tipped</li> <li>cylindrical shank</li> </ul>	<ul style="list-style-type: none"> <li>chip-free holes thanks to scoring cut of the spurs</li> </ul>	<ul style="list-style-type: none"> <li>clamping element: drill chuck</li> </ul>

Product features				Order information				
Ø D [mm]	Ø d [mm]	L3 [mm]	L1 [mm]		L/R	PU [pc.]	L	Order-No.
15	10	60	90		R	1		50600543
17	10	60	90		R	1		50600547
20	10	60	90		R	1		50600553
25	10	60	90		R	1		50600561
30	10	60	90		R	1		50600569
32	10	60	90		R	1		50600571
35	10	60	90		R	1		50600575

## HW 2061 Countersink Parts

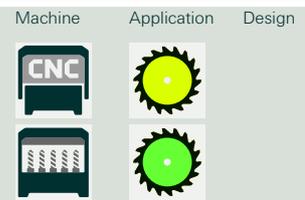
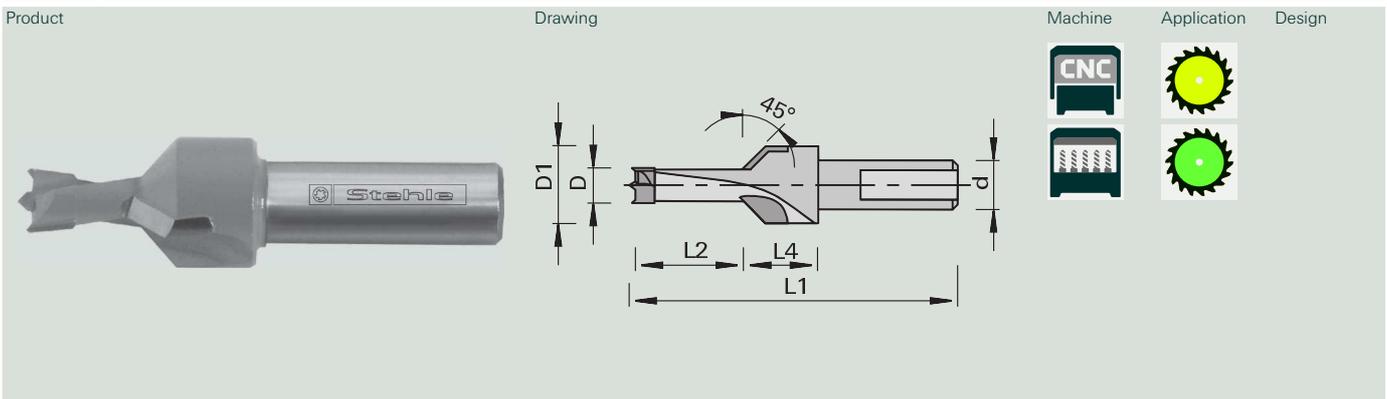
For twist drills and dowel drills



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• for drilling of countersinks in solid woods and wood-based panels</li> <li>• for chip-free countersink holes at 90 degree angle</li> </ul>	<ul style="list-style-type: none"> <li>• HW-tipped</li> </ul>		<ul style="list-style-type: none"> <li>• for installation on twist drills and dowel bits with back-guide on the drill spiral with set screw</li> <li>• continuous adjustment of the countersink diameter and the boring depth</li> </ul>

Product features			Order information					
Ø D [mm]	Ø d [mm]	L1 [mm]		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
16	5,0	15		1		50600393		50600394
18	8,0	15		1		50600395		50600396
Spare parts		Dimension [mm]				PU [pc.]	L	Order-No.
Cranked Wrench Keys		SW3 DIN ISO 2936				1		009672
Set Screws		M6x4 DIN EN ISO 4029				10		167068

## HW 2060 Boring Countersink

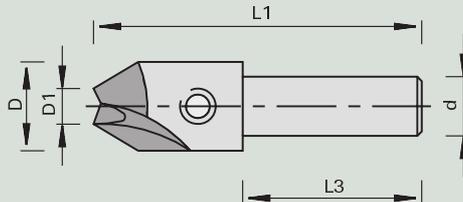


Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• portable boring machines</li> <li>• automatic boring machines</li> <li>• for drilling and countersinking in solid woods and wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>• spiral PTFE coated</li> <li>• 2 spurs</li> <li>• centering point</li> </ul>	<ul style="list-style-type: none"> <li>• for drilling and countersinking in one pass</li> <li>• safe drilling thanks to centering point</li> </ul>	<ul style="list-style-type: none"> <li>• adjusting screw Order-No. 001600 M5x10 DIN 551 for precise length adjustment included in delivery</li> <li>• adjusting screw Order-No. 186017 M5x11,5 for Weeke quick clamping chuck must be ordered separately</li> <li>• clamping elements: combi chuck, quick-clamping chuck</li> </ul>

Product features			Order information							
Ø D [mm]	L2 [mm]	Ø D1 [mm]	L4 [mm]	Ø d [mm]	L1 [mm]	PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
8.0	12	16	15	10	57.5	1		50600389		50600390
8.0	12	16	15	10	70	1		50600391		50600392

# HW 2062 Countersink Bits

For twist drills

<p>Product</p> 	<p>Drawing</p> 	<p>Machine</p>  	<p>Application</p>  	<p>Design</p>
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<p>Machine / Application</p> <ul style="list-style-type: none"> <li>• for drilling of countersinks in solid woods and wood-based panels</li> <li>• for chip-free countersink holes at 90 degree angle</li> </ul>	<p>Design</p> <ul style="list-style-type: none"> <li>• HW-tipped</li> </ul>	<p>Advantages</p>	<p>Notes</p> <ul style="list-style-type: none"> <li>• for mounting of twist drills with Ø 3 - 6 mm</li> <li>• continuous adjustment of the countersink diameter and the boring depth</li> </ul>
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Product features					Order information					
Ø D [mm]	Ø D1 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]			L/R	PU [pc.]	L	Order-No.
15	3.0	10	30	58			R		1	50600397
15	3.5	10	30	58			R		1	50600430
15	4.0	10	30	58			R		1	50600431
15	4.5	10	30	58			R		1	50600381
15	5.0	10	30	58			R		1	50600382
Spare parts			Dimension [mm]					PU [pc.]	L	Order-No.
Set Screws - with hexagon socket and cup point			M6x6 DIN EN ISO 4029					10		180003



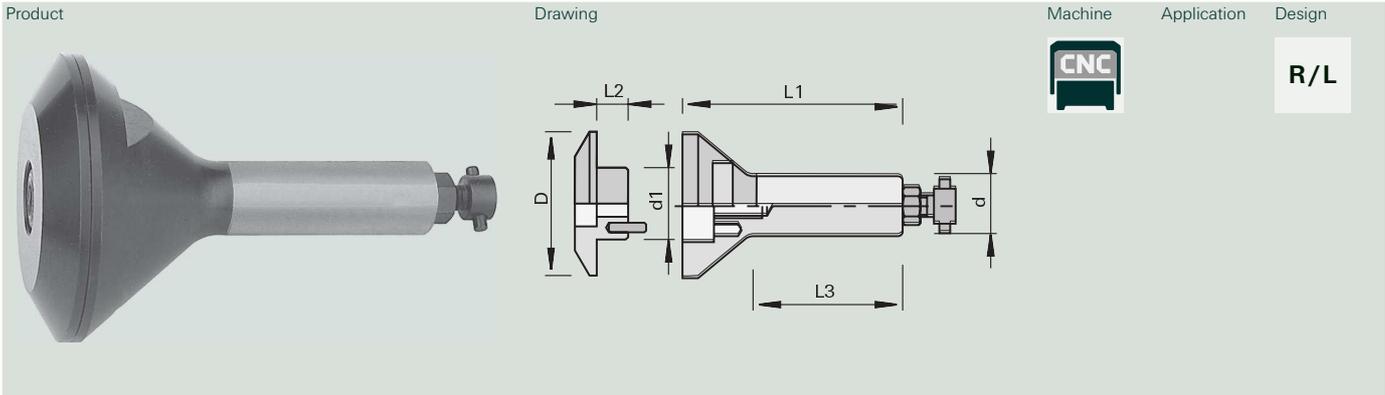
# CLAMPING SYSTEMS

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## Adapters with cylindrical shank



Application

Design

R/L

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for PS 2000-E and draw-in collet chuck for mounting of circular saw blades and grooving cutters</li> </ul>	<ul style="list-style-type: none"> <li>secured against rotation with drive pin</li> </ul>		<ul style="list-style-type: none"> <li>for clockwise and counter-clockwise rotation</li> <li>length adjusting screw Order-No. 172921 is required for PS 2000-E</li> <li>included in delivery: clamping arbor, clamping flange, cap screw and length adjusting screw for ps-System for shank <math>\varnothing</math> 16 Order-No. 172115, shank <math>\varnothing</math> 25 Order-No. 172113</li> </ul>

Product features					Order information			
$\varnothing$ D [mm]	$\varnothing$ d [mm]	L2 [mm]	L1 [mm]	L3 [mm]		PU [pc.]	L	Order-No.
60	16	8,0	78	43	for plate thickness max. 6 mm	1		171394
60	25	9,0	94	55	for plate thickness max. 8 mm	1		167826

## Adapters with cylindrical shank

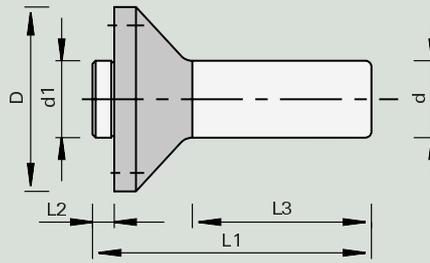
Product

Drawing

Machine

Application

Design



R/L

Machine / Application

Design

Advantages

Notes

- for PS 2000-E and draw-in collet chuck for the mounting of tools with bore

- tool attached and secured against rotation with screws

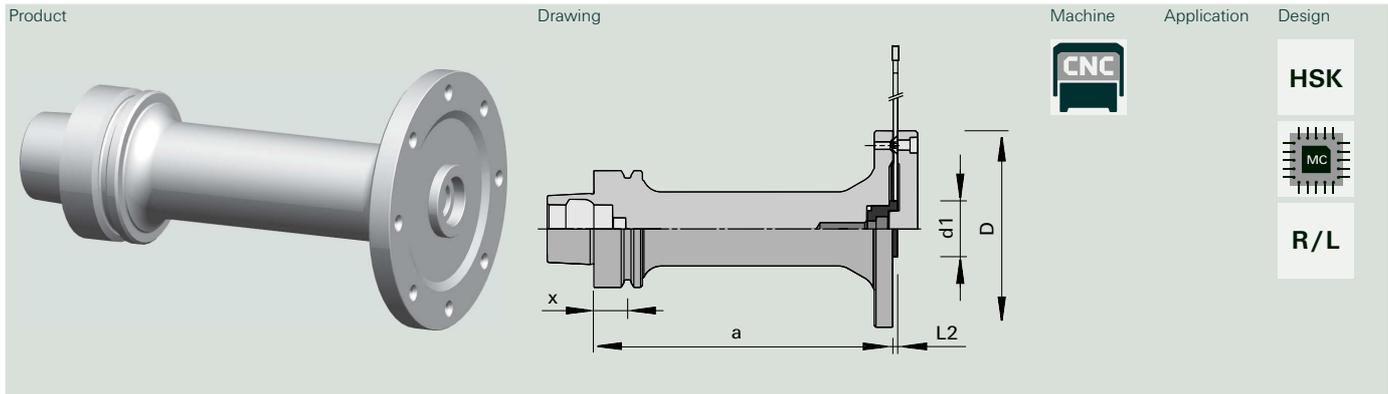
- for right-hand and left-hand rotation
- for PS 2000-E, the length adjusting screw order no. 172921 is required
- clamping length L2 = 30 and 36 mm for one-piece and multi-piece cutters and cutterheads
- clamping length L2 = 4 and 5 mm for circular saw blades and grooving tools
- Scope of delivery: Adapter for Lamello Clamex P® including 4 countersunk screws, all other adapters without countersunk screws. Screws of the required length must be ordered separately depending on the application.

Product features

Order information

Ø D [mm]	Ø d [mm]	Ø d1 [mm]	L2 [mm]	L1 [mm]	L3 [mm]	NL		PU [pc.]	L	Order-No.
50	16	22	4,0	68	45	4/M5/34 + 4/M4/36		1		184277
50	25	22	4,0	92	60	4/M5/34 + 4/M4/36		1		184276
60	16	30	4,0	80	60	4/M6/48	Lamello Clamex P®	1		184304
60	25	30	4,0	90	70	4/M6/48	Lamello Clamex P®	1		184305
60	25	25	30	111	60	6/M6/48		1	o	168814
60	25	30	36	117	60	6/M6/48		1		168815
66	25	30	5,0	92	60	4/M5/48		1		171386

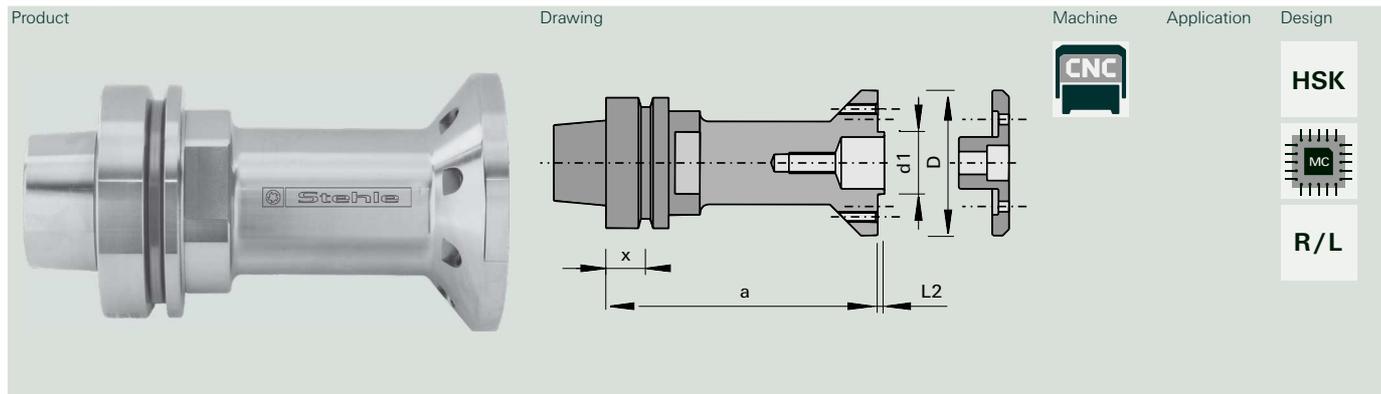
## CNC Combi Saw Blade Adapters HSK 63F



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers with automatic tool changer</li> <li>• for precise mounting of circular saw blades</li> </ul>	<ul style="list-style-type: none"> <li>• interface DIN 69893 HSK 63 F for high-precision adapter to the machine spindle</li> </ul>	<ul style="list-style-type: none"> <li>• exchangeable centering adapter can be obtained separately; thus saw blades with different bore diameters can be used on the same mounting device</li> <li>• the mounting of the saw blade can be made with or without lid</li> <li>• adapter available with different measures</li> </ul>	<ul style="list-style-type: none"> <li>• for right- and lefthand rotation</li> <li>• mounting of the saw directly by means of countersunk screws or lid by means of cylinder head screw</li> <li>• included in delivery: lid, countersunk screws, cylinder head screws and centering adapter for saw blade bore <math>\varnothing 30</math> mm with retaining ring</li> </ul>

Product features							Order information		
$\varnothing D$ [mm]	$\varnothing d$ [mm]	$\varnothing d1$ [mm]	L2 [mm]	a [mm]	x [mm]	NL	PU [pc.]	L	Order-No.
106	HSK 63F	30	2,5	40	18	8/M5/90	1		184835
106	HSK 63F	30	2,5	50	18	8/M5/90	1		184836
106	HSK 63F	30	2,5	100	18	8/M5/90	1		184837
106	HSK 63F	30	2,5	130	18	8/M5/90	1		184838
106	HSK 63F	30	2,5	160	18	8/M5/90	1		184839
Accessories			Dimension [mm]				PU [pc.]	L	Order-No.
Lid			106x15x20				1		184845
Adapter			$\varnothing 30$				1		184840
Adapter			$\varnothing 31,75$				1		184841
Adapter			$\varnothing 32$				1		184842
Adapter			$\varnothing 35$				1		184843
Adapter for body thickness 2.0 or 2.2 mm			$\varnothing 30$				1		185666
Adapter			$\varnothing 40$				1		184844
Spare parts			Dimension [mm]				PU [pc.]	L	Order-No.
Head Cap Screws			M5x16 DIN EN ISO 4762				10		001870
Head Cap Screws for adapters			M8x12 DIN 7984				10		184846
Locking Rings			8/13x8,4x0,7				1		185497
Countersunk Screws			M5x12 T20				10		166709

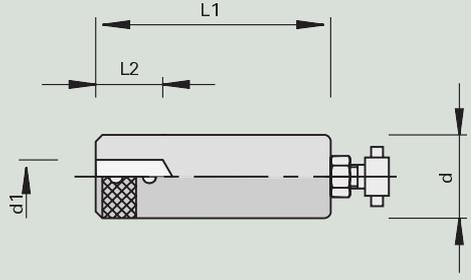
## Saw Blade Adapters HSK 63F



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers with automatic tool changer</li> <li>• for precise mounting of circular saw blades and grooving cutters</li> </ul>	<ul style="list-style-type: none"> <li>• interface DIN 69893 HSK 63 F for high-precision adapter to the machine spindle</li> </ul>		<ul style="list-style-type: none"> <li>• for clockwise and counter-clockwise rotation</li> <li>• mounting of the saw directly by means of countersunk screw or lid 183310 by means of cylinder head screw</li> <li>• included in delivery: <ul style="list-style-type: none"> <li>• adapter with countersunk screws</li> <li>• lid with cylinder head screws to be ordered separately</li> </ul> </li> </ul>

Product features	Ø d [mm]	Ø d1 [mm]	L2 [mm]	a [mm]	x [mm]	NL	PU [pc.]	L	Order-No.
70	HSK 63F	30	1,8	70	18	8/M5/52 + 2/6/42	1		186083
70	HSK 63F	30	1,8	130	18	8/M5/52 + 2/6/42	1		186432
Accessories	Dimension [mm]						PU [pc.]	L	Order-No.
Lid with cylinder head screws	70x24x8 (2/6/42)						1		183310
Spare parts	Dimension [mm]						PU [pc.]	L	Order-No.
Countersunk Screws	M5x8 T20						10		164005

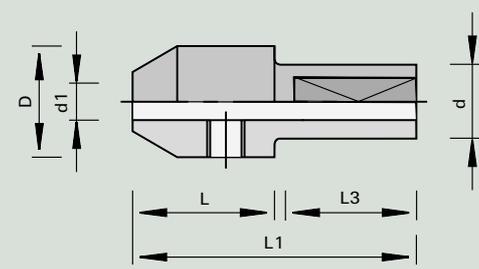
## Adapters with cylindrical shank

<p>Product</p> 	<p>Drawing</p> 	<p>Machine</p> 	<p>Application</p>	<p>Design</p> <p>R/L</p>
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<p>Machine / Application</p> <ul style="list-style-type: none"> <li>• for mounting of shank-type tools in PS 2000-E for shank diameter 6 - 12 mm</li> </ul>	<p>Design</p>	<p>Advantages</p>	<p>Notes</p> <ul style="list-style-type: none"> <li>• the tool shanks must feature a flat clamping area</li> <li>• length adjusting screw Order-No. 172921 is required for PS 2000-E</li> <li>• with length adjusting screw for ps-System Ø 16 mm Order-No. 172115, Ø 25 mm Order-No. 172113</li> </ul>
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Product features				Order information		
Ø d [mm]	Ø d1 [mm]	L2 [mm]	L1 [mm]	PU [pc.]	L	Order-No.
25	6	20	70	1		172103
25	8	20	70	1		172104
25	10	20	70	1		172101
25	12	20	70	1		172102

## Adapters

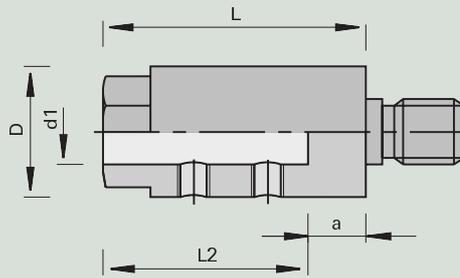
<p>Product</p> 	<p>Drawing</p> 	<p>Machine</p> 	<p>Application</p>	<p>Design</p> <p>R/L</p>
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<p>Machine / Application</p> <ul style="list-style-type: none"> <li>• for mounting of twist drills in combi chuck and Klack chuck</li> </ul>	<p>Design</p> <ul style="list-style-type: none"> <li>• shank with clamping surface</li> <li>• thread M5, without screw</li> </ul>	<p>Advantages</p>	<p>Notes</p> <ul style="list-style-type: none"> <li>• adjusting and attachment screw Order-No. 186017 M5x11.5 for Weeke quick clamping chuck must be ordered separately</li> </ul>
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Product features						Order information					
Ø d1 [mm]	L [mm]	Ø d [mm]	L3 [mm]	Ø D [mm]	L1 [mm]			PU [pc.]	L	Order-No.	
2	19	10	21	15	41			1		183275	
2,5	19	10	21	15	41			1		183276	
3	19	10	21	15	41			1		183277	
3,5	19	10	21	15	41			1		183278	
4	19	10	21	15	41			1		183279	
5	19	10	21	15	41			1		183280	
Spare parts			Dimension [mm]						PU [pc.]	L	Order-No.
Set Screws			M6x6 DIN EN ISO 4029						10		180003
Cranked Wrench Keys			SW3 DIN ISO 2936						1		009672

## Clamping Chuck Combi Systems

Product Drawing Machine Application Design



<b>Machine / Application</b> • for mounting of drill bits with cylindrical shank and clamping surface	<b>Design</b> • with set screws for the clamping of the drill bit	<b>Advantages</b>	<b>Notes</b> • clamping chucks with "BSS" mark are compatible with quick-changing system for drill bits • for threaded shank design and appropriate machines see chapter 8 Technical Appendix
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**Product features** **Order information**

Ø D [mm]	Ø d1 [mm]	L2 [mm]	L [mm]	a [mm]	Type		PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
15	8	20	22	2.0	D		1	o	161282	o	161281
15	8	20	24.5	4.5	A		1	o	010683	o	010677
15	8	20	24.5	4.5	B		1	o	161285	o	161284
15	8	20	24.5	4.5	C		1	o	058412	o	058411
15	8	20	37	17	C		1		059300		059299
19	10	20	24.5	4.5	A		1		003575		003574
19	10	20	24.5	4.5	B		1		008003		008002
19	10	20	24.5	4.5	C		1		058414		058413
19	10	20	25	5.0	D		1		003571		003570
19	10	20	25	5.0		cyl. shank Ø 10x30	1	o	183055	o	183055
19	10	20	47	27	G		1		161287		161286
19	10	20	29.3	9.3	F		1		003573		003572
19	10	20	28.5	8.5	E		1	s	161987	s	161283
19	10	20	37	17	C		1		161681		161680
19	10	20	47	27	D	BSS	1	s	170372	s	170371

Spare parts	Dimension [mm]	PU [pc.]	L	Order-No.
Set Screws	M6x4 DIN EN ISO 4029	10		167068
Set Screws	M6x5 DIN EN ISO 4029	10		165049
Set Screws	M5x4 DIN EN ISO 4029	10		001608

## Universal Drill Chucks with SK-shank or HSK-shank

Product

Drawing

Machine

Application

Design



R/L



Machine / Application

- CNC machining centers with automatic tool changer
- for clamping of drill bits with cylindrical shank

Design

- continuously adjustable clamping area between 1-13 mm
- n max = 20,000 min-1
- hardened clamping jaws

Advantages

- fine balance is easy on spindle and spindle bearing
- high clamping accuracy over total lifetime of drill chuck thanks to hardened clamping jaws
- high holding moment
- no chips and dirt in the clamping zone thanks to special clamping jaws

Notes

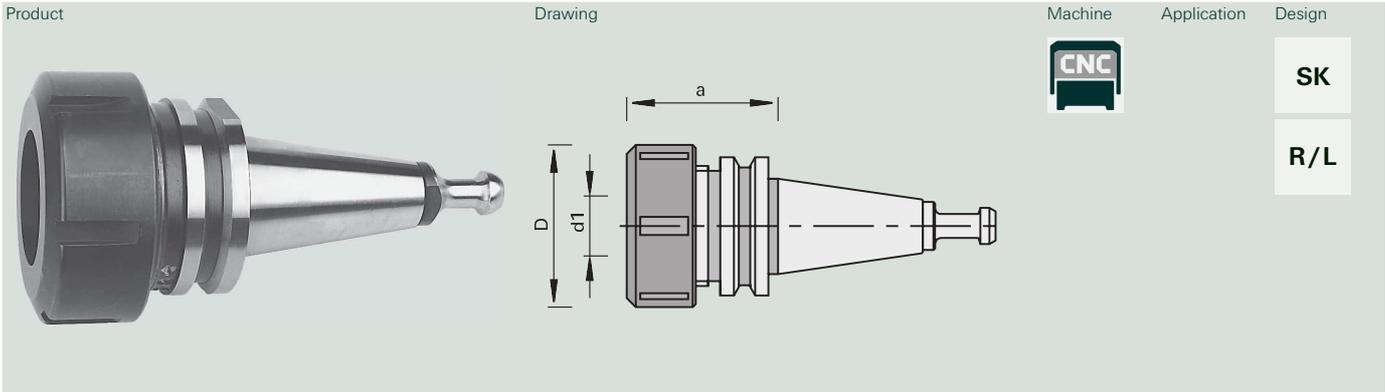
- for clockwise and counter-clockwise rotation
- included in delivery: clamping key, retaining bolts

Product features

Order information

Ø D [mm]	Ø d [mm]	Ø d1 [mm]	L1 [mm]		PU [pc.]	L	Order-No.
50	HSK 63F	1-13	112	Homag, EIMA, Weeke, IMA from 9/94	1		180381
57	HSK 63F	3-16	112	Homag, EIMA, Weeke, IMA from 9/94	1		180382
Spare parts			Dimension [mm]		PU [pc.]	L	Order-No.
Cranked Wrench Keys			SW6x100		1	o	180383

## Draw-In Collet Chucks with SK shank



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers with automatic tool changer</li> <li>• for clamping of shank-type tools with cylindrical shank</li> </ul>	<ul style="list-style-type: none"> <li>• quick-release taper according to DIN 69871 and ISO (without dog and locating grooves)</li> <li>• lock nut with sleeve bearing</li> </ul>	<ul style="list-style-type: none"> <li>• minimization of setup-times thanks to easy and quick tool change</li> <li>• high cutting quality and long edge lives thanks to high concentricity</li> </ul>	<ul style="list-style-type: none"> <li>• for clockwise and counter-clockwise rotation</li> <li>• collet chucks according to Type 470E/ER32 <math>\varnothing</math> 2..20 mm</li> <li>• collet chucks according to Type 472E/ER40 <math>\varnothing</math> 4..25 mm</li> <li>• included in delivery:collet chuck, clamping nut and retaining bolt (Biesse 173641)</li> </ul>

Product features					Order information					
$\varnothing$ D [mm]	$\varnothing$ d [mm]	$\varnothing$ d1 [mm]	a [mm]	Type				PU [pc.]	L	Order-No.
50	SK 30 (DIN ISO)	2-20	50	470E/ER32	Biesse			1		173639
63	SK 30 (DIN ISO)	4-25	57	472E/ER40	Biesse			1		175790
Spare parts		Dimension [mm]						PU [pc.]	L	Order-No.
Clamping Nuts with sleeve bearing		M50x1,5R						1	o	178762
Retaining Bolts								1		173641
Retaining Bolts								1	o	175637
Hook Wrenches		58/62 DIN 1810						1		169299
Hook Wrenches		58/62 DIN 1810						1		186765
Clamping Nuts with sleeve bearing		M40x1,5R						1		178761
[f] torque wrench		40-200 Nm						1		184890
Hook Wrenches		45/50 DIN 1810						1		175851
Hook Wrenches		45/50 DIN 1810						1		186467

## Draw-In Collet Chucks with SK shank with ring gear

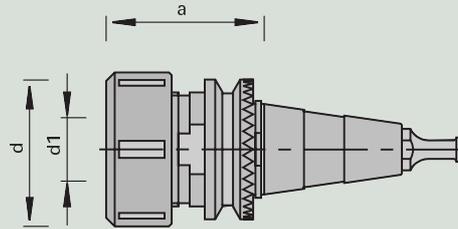
Product

Drawing

Machine

Application

Design



SK

R/L

Machine / Application

- CNC machining centers with automatic tool changer
- for clamping of shank-type tools with cylindrical shank

Design

- quick-release taper according to SK 30 with ring gear
- lock nut with sleeve bearing

Advantages

- minimization of setup-times thanks to easy and quick tool change
- high cutting quality and long edge lives thanks to high concentricity

Notes

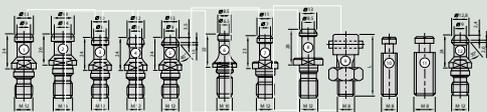
- for clockwise and counter-clockwise rotation
- replaceable retaining bolt
- collet chucks according to Type 462E/OZ25 Ø 4..25 mm
- collet chucks according to Type 470E/ER32 Ø 2..20 mm
- included in delivery: collet chuck, clamping nut and retaining bolt

Product features

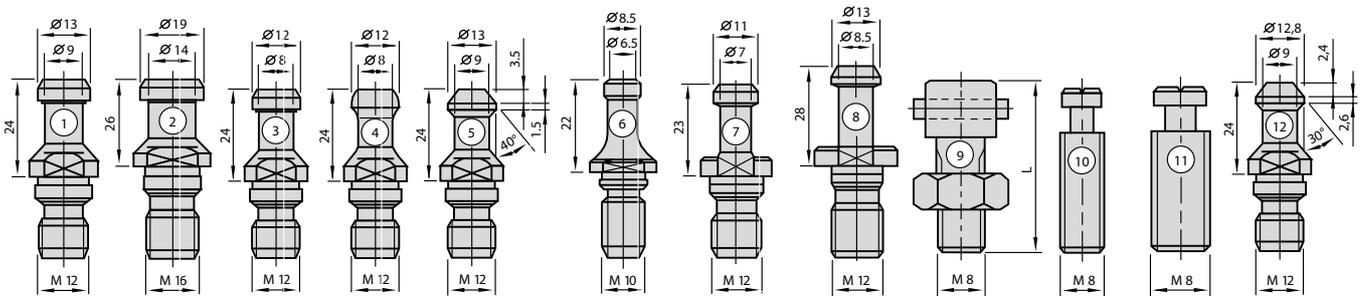
Order information

Ø D [mm]	Ø d [mm]	Ø d1 [mm]	a [mm]	Type			PU [pc.]	L	Order-No.
50	SK 30	2-20	55	470E/ER32	SCM, Morbidelli		1		173644
60	SK 30	4-25	72	462E/OZ25	SCM, Morbidelli		1		175792
Spare parts			Dimension [mm]				PU [pc.]	L	Order-No.
Clamping Nuts with sleeve bearing			M40x1,5R		for Ø D = 50		1		178761
Retaining Bolts			Ø8,5				1		173646
Hook Wrenches			45/50 DIN 1810		for Ø D = 50		1		175851
Hook Wrenches			58/62 DIN 1810		for Ø D = 60		1		169299

## Retaining Bolts

Product	Drawing	Machine	Application	Design
				<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">BT</div> <div style="border: 1px solid black; padding: 5px;">SK</div>

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for use in Hydro clamping chuck PS 2000-E, adapter and draw-in collet chuck with SK + BT-shank</li> </ul>			<ul style="list-style-type: none"> <li>attachment screw for tools with shank diameter 25 mm</li> </ul>



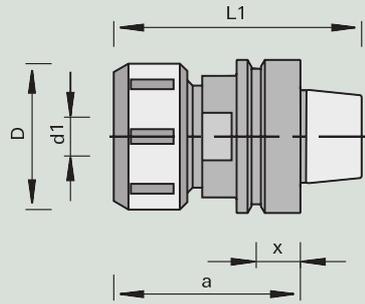
Product features		Order information			
	Type		PU [pc.]	L	Order-No.
for SK 30	1	IMA, Maka, Reichenbacher, Weeke	1		169293
for SK 40 with ventilation	2	IMA, Reichenbacher, Stegherr	1	o	169294
for SK 40	2	IMA, Reichenbacher, Stegherr, Maka	1		179339
for SK 30	3	Rover old, Biesse up to 08/92	1	o	175637
for SK 30	4	Rover new, Biesse (HSD motor) from 09/92, Masterwood (Colombo motor)	1		173641
for SK 30	5	Alberti	1	o	177020
for CMS	12	CMS, Masterwood	1		177021
Retaining Bolt Ø 8.5 mm	6	Morbidelli, SCM	1		173646
for BT 30	7	Shoda	1	o	176200
for BT 35	8	Heian	1		176103
for ps-System 25 mm Ident-No. 173752	9	ps-System	1		172113
for PS-2000 E Ident-No. 173352	10	PS 2000-E	1		172921
stop screw	11	draw-in collet chuck	10		172828

## Draw-In Collet Chucks with HSK shank

Product



Drawing



Machine



Application

Design



Machine / Application

- CNC machining centers with automatic tool changer
- for precise clamping of shank-type tools with cylindrical shank

Design

- interface according to DIN 69893 HSK 50F, HSK 63F and HSK 63E
- lock nut with sleeve bearing

Advantages

- flexible utilization by collet chucks

Notes

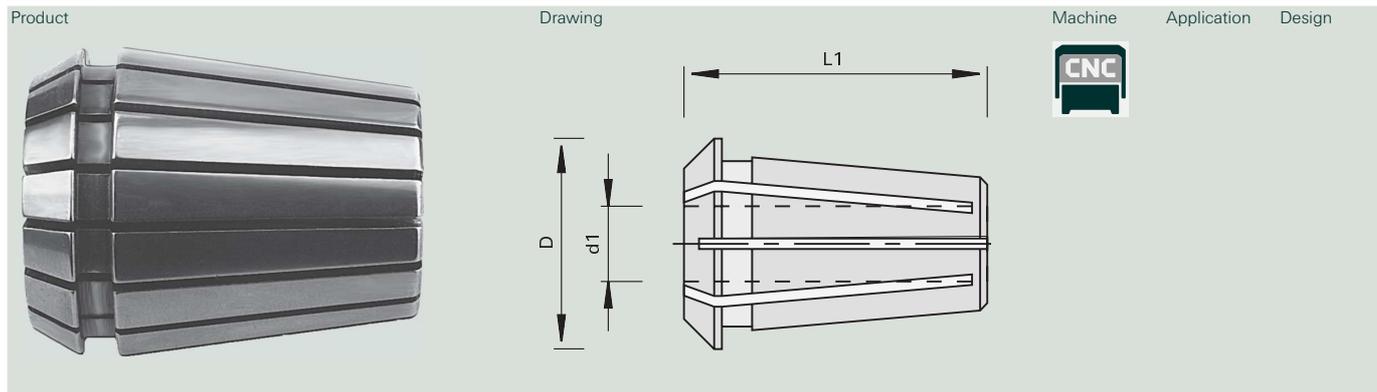
- for right- and lefthand rotation
- $\varnothing d1$  = collet chuck diameter 2 - 25 mm
- collet chucks according to DIN 6388 type 462E/OZ25
- included in delivery: collet chuck, clamping nut without spanner wrench
- Attention: different interfaces in case of CMS machines, according to spindle performance (KW)

Product features

Order information

$\varnothing D$ [mm]	$\varnothing d1$ [mm]	$\varnothing d$ [mm]	L1 [mm]	a [mm]	x [mm]		PU [pc.]	L	Order-No.
60	2-25	HSK 63F	101	76	18	Homag, IMA from 01/95, Weeke from 03/98, HOLZ-HER, SCM, CMS (12+15 KW)	1		50811234
60	2-25	HSK 63F	140	115	18	Homag, IMA from 01/95, Weeke from 03/98, HOLZ-HER, CMS (12+15 KW)	1		179170
Spare parts			Dimension [mm]				PU [pc.]	L	Order-No.
Hook Wrenches			58/62 DIN 1810				1		169299
Torque wrench			40-200 Nm				1		184890

## Precision collets - 462E/OZ25



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for use in draw-in collet chuck Type 462E/OZ25</li> </ul>	<ul style="list-style-type: none"> <li>clamping tolerance 0.5 mm</li> <li>according to DIN 6388 Type 462E/OZ25</li> </ul>	<ul style="list-style-type: none"> <li>optimum transmission of clamping force thanks to 12 slots from top and bottom</li> </ul>	

Product features			Order information				
Ø d1 [mm]	Ø d1 [inch]	L1 [mm]			PU [pc.]	L	Order-No.
2		52			1	o	183803
3		52			1		183804
4		52			1		183805
5		52			1		183806
6		52			1		180213
	1/4"	52			1		175815
7		52			1	o	183807
8		52			1		180358
9,5		52			1		175817
	3/8"	52			1		185275
10		52			1		170782
12		52			1		168742
	1/2"	52			1		175820
13		52			1		180215
14		52			1		170783
	5/8"	52			1		175823
15		52			1	o	183808
16		52			1		168743
18		52			1		180216
	3/4"	52			1		175826
20		52			1		168744
25		52			1		168745

## Precision collets - 415E/OZ16

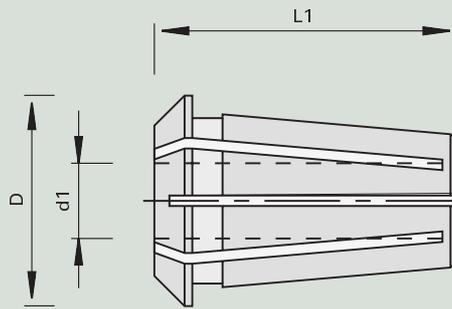
Product

Drawing

Machine

Application

Design



Machine / Application

Design

Advantages

Notes

- for use in draw-in collet chuck Type 415E/OZ16

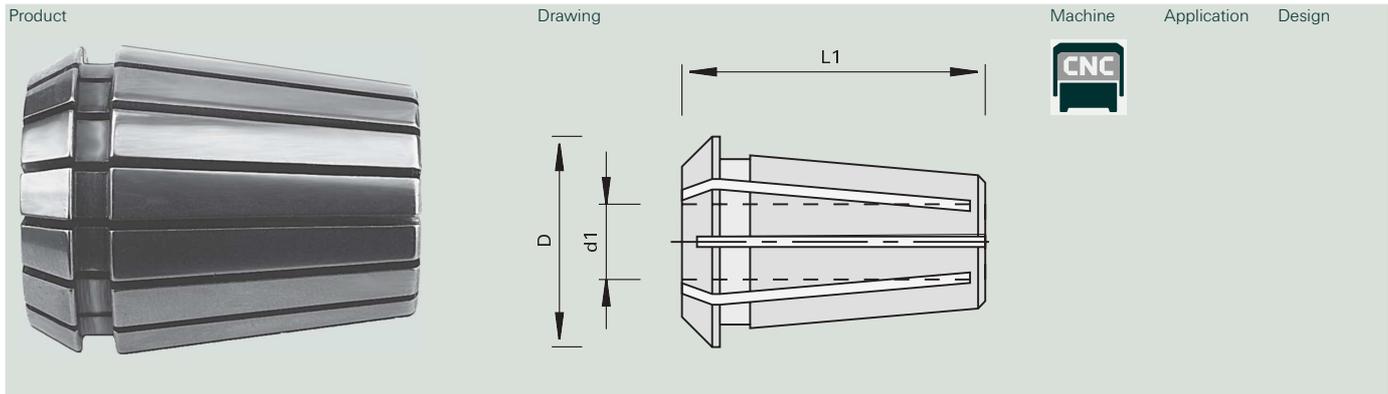
- slotted from top and bottom
- clamping tolerance 0.5 mm
- according to DIN 6388 Type 415E/OZ16

Product features

Order information

Ø d1 [mm]	Ø D [mm]	L1 [mm]									PU [pc.]	L	Order-No.
2,5	25.5	40									1	o	820753
3	25.5	40									1	o	820754
4	25.5	40									1	o	820494
4,5	25.5	40									1	o	830236
5	25.5	40									1	o	820495
6	25.5	40									1	o	170779
6,35	25.5	40									1	o	821421
7	25.5	40									1	o	829692
8	25.5	40									1		170780
9	25.5	40									1	o	825190
9,5	25.5	40									1		168739
10	25.5	40									1		170781
12	25.5	40									1		168740
12,7	25.5	40									1	o	830156
13	25.5	40									1	o	821221
16	25.5	40									1		168741

## Precision collets - 430E/ER25, 470E/ER32, 472E/ER40



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• for use in draw-in collet chuck Type 430E/ER25, 470E/ER32, 472E/ER40</li> </ul>	<ul style="list-style-type: none"> <li>• slotted from top and bottom</li> <li>• clamping tolerance 1 mm</li> </ul>		<ul style="list-style-type: none"> <li>• type 430E/ER25 Ø 6 - 16 mm for special chuck</li> <li>• type 470E/ER32 Ø 3 - 20 mm</li> <li>• type 472E/ER40 Ø 6 - 25 mm</li> </ul>

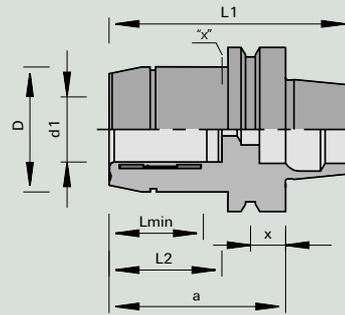
Product features					Order information			
Ø d1 [mm]	Ø d1 [inch]	Ø D [mm]	L1 [mm]	Type	PU [pc.]	L	Order-No.	
3		33	40	470E/ER32	1	o	173647	
4		33	40	470E/ER32	1	o	173648	
5		33	40	470E/ER32	1	o	173649	
6		33	40	470E/ER32	1		173650	
7		33	40	470E/ER32	1	o	173651	
8		33	40	470E/ER32	1		173652	
10		33	40	470E/ER32	1		173653	
12		33	40	470E/ER32	1		173654	
13		33	40	470E/ER32	1	o	173655	
14		33	40	470E/ER32	1	o	173656	
16		33	40	470E/ER32	1		173657	
18		33	40	470E/ER32	1	o	173658	
19		33	40	470E/ER32	1	o	173659	
20		33	40	470E/ER32	1		173660	
	1/4"	33	40	470E/ER32	1		175829	
	1/2"	33	40	470E/ER32	1		175830	
	5/8"	33	40	470E/ER32	1	o	175831	
	3/4"	33	40	470E/ER32	1	o	175832	
6		41	46	472E/ER40	1	o	180912	
8		41	46	472E/ER40	1		180913	
10		41	46	472E/ER40	1	o	180914	
12		41	46	472E/ER40	1		175833	
16		41	46	472E/ER40	1		175834	
18		41	46	472E/ER40	1	o	175835	
20		41	46	472E/ER40	1		175836	
25		41	46	472E/ER40	1		175837	
	1/4"	41	46	472E/ER40	1	o	175838	
	1/2"	41	46	472E/ER40	1	o	175839	
	5/8"	41	46	472E/ER40	1	o	175840	
	3/4"	41	46	472E/ER40	1	o	175841	
	1"	41	46	472E/ER40	1	o	175842	
6		26	34	430E/ER25	1	o	181986	
8		26	34	430E/ER25	1		181987	
10		26	34	430E/ER25	1		181988	
12		26	34	430E/ER25	1		181989	
14		26	34	430E/ER25	1	o	181990	
16		26	34	430E/ER25	1		181991	

## Hydro Clamping Chucks ps-System with HSK 63F shank

Product



Drawing



Machine



Application

Design

**HSK**

max. **30.000** U/min

**R/L**

Machine / Application

- CNC machining centers with automatic tool changer
- for precise clamping of shank-type tools with cylindrical shank

Design

- n max = 30,000 min -1
- interface DIN 69893 HSK 63 F

Advantages

- minimization of setup-times thanks to easy and quick tool change
- high cutting quality and long edge lives thanks to high concentricity
- optimum torque transfer

Notes

- for right- and lefthand rotation
- with bore for installation of micro chips for electronic tool detection
- x = pressurization by means of screwdriver
- hexagonal screwdriver is not included in delivery
- Lmin minimum clamping length = minimum shaft length

Product features

Ø d1 [mm]	Lmin [mm]	L2 [mm]	Ø d [mm]	Ø D [mm]	L1 [mm]	a [mm]	x [mm]	Weight [kg]	PU [pc.]	L	Order-No.
10	31	41	HSK 63F	30	105	80	18	1.2	1		184725
12	36	46	HSK 63F	32	105	80	18	1.16	1		184306
16	39	49	HSK 63F	38	105	80	18	1.20	1		184307
20	41	51	HSK 63F	52.5	105	80	18	1.30	1		184308
25	47	57	HSK 63F	52.5	109	84	18	1.28	1		184309

Order information

Product features

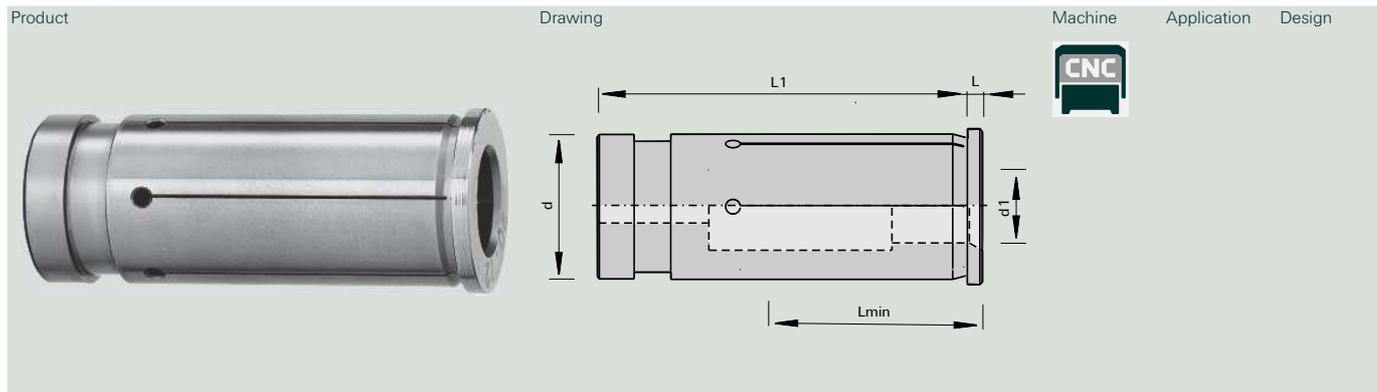
Ø d1 [inch]	Lmin [mm]	L2 [mm]	Ø d [mm]	Ø D [mm]	L1 [mm]	a [mm]	x [mm]	Weight [kg]	PU [pc.]	L	Order-No.
3/8"	31	41	HSK 63F	30	105	80	18	1.2	1		184724
1/2"	36	47,5	HSK 63F	32	105	80	18	1.2	1		184726

Order information

Spare parts

Spare parts	Dimension [mm]	Suitable for	PU [pc.]	L	Order-No.
Screwdrivers	SW4x100	184306, 184724, 184725, 184726	1		166091
Screwdrivers	SW5x150	184307, 184308, 184309	1		168703

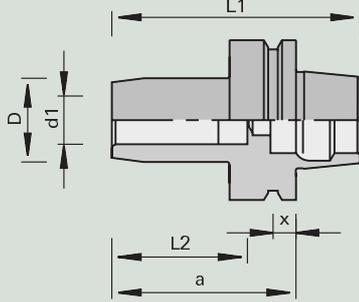
## Universal Reducing Bushings



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for mounting of shank-type tools in sino, TRIBOS, ps-System</li> </ul>	<ul style="list-style-type: none"> <li>shank diameter tolerance h7 or g7</li> </ul>		<ul style="list-style-type: none"> <li>Lmin minimum clamping length = minimum shaft length</li> </ul>

Product features					Order information		
Ø d1 [mm]	Ø d1 [inch]	Lmin [mm]	Ø d [mm]	L1 [mm]	PU [pc.]	L	Order-No.
3		27	12	45	1	o	183022
4		27	12	45	1	o	183023
5		27	12	45	1	o	183024
6		27	12	45	1		183025
8		27	12	45	1		183026
3		27	20	50.5	1	o	183027
4		27	20	50.5	1	o	183028
5		27	20	50.5	1	o	183029
6		27	20	50.5	1	o	183030
8		27	20	50.5	1		183032
10		32	20	50.5	1		183034
12		37	20	50.5	1		183036
14		37	20	50.5	1	o	183038
16		38	20	50.5	1		183040
6		27	25	54.5	1		182304
8		27	25	54.5	1		182305
10		32	25	54.5	1		182306
12		37	25	54.5	1		182307
14		37	25	54.5	1		182308
16		38	25	54.5	1		182309
18		38	25	54.5	1		182310
20		42	25	54.5	1		182311
	1/2"	37	25	54.5	1		182653
	3/4"	42	25	54.5	1		182655
10		32	16	47.5	1		186100
12		37	16	47.5	1		186101
8		27	16	47.5	1		186099

## TRIBOS Power Shrink Chucks

Product	Drawing	Machine	Application	Design
				<b>HSK</b> max. <b>40.000</b> U/min  <b>R/L</b>

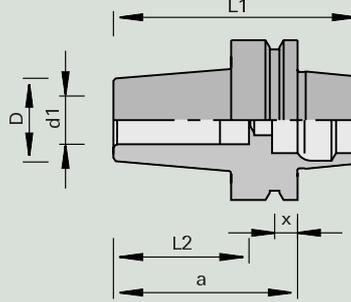
Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers with automatic tool changer</li> <li>• for precise clamping of shank-type tools with cylindrical shank</li> </ul>	<ul style="list-style-type: none"> <li>• n max = 40,000 min-1</li> </ul>	<ul style="list-style-type: none"> <li>• low weight is easy on machine bearing</li> <li>• suitable for high RPM 's</li> <li>• optimum chip extraction thanks to slim design</li> <li>• increased process safety, long edge lives and high machining quality thanks to very high concentricity and repeating accuracy (&lt; 0.003 mm)</li> </ul>	<ul style="list-style-type: none"> <li>• for right- and lefthand rotation</li> <li>• different diameters upon request</li> <li>• allowed projection: 4 x d1</li> <li>• clamping of the tools by means of the clamping device</li> <li>• can also be done at Stehle upon request</li> <li>• TRIBOS chuck with reinforced design especially for heavy roughing can be delivered upon request</li> <li>• delivery without retaining bolts; please choose retaining bolts according to the machine (see page with retaining bolts)</li> </ul>

Product features								Order information			
Ø d1 [mm]	L2 [mm]	Ø d [mm]	Ø D [mm]	L1 [mm]	a [mm]	x [mm]	Weight [kg]	PU [pc.]	L	Order-No.	
12	48,5	HSK 63F	19	100	75	18	0.69	1		180257	
16	48,5	HSK 63F	26	100	75	18	0.74	1		180899	
20	52,9	HSK 63F	30	100	75	18	0.77	1		180258	
25	55	HSK 63F	35	100	75	18	0.79	1		180710	

Product features								Order information			
Ø d1 [mm]	L2 [mm]	Ø d [mm]	Ø D [mm]	L1 [mm]	a [mm]	x [mm]	Weight [kg]	PU [pc.]	L	Order-No.	
20	55	SK 30 (DIN)	30	127	80			1		180888	
25	55	SK 30 (DIN)	35	127	80			1		180836	

Accessories								PU [pc.]	L	Order-No.
Reducing inserts for Mounting Device				for Ø d = 6				1	o	183719
Reducing inserts for Mounting Device				for Ø d = 8				1	o	183720
Reducing inserts for Mounting Device				for Ø d = 10				1	o	183721
Reducing inserts for Mounting Device				for Ø d = 12				1		180263
Reducing inserts for Mounting Device				for Ø d = 20				1		180264
Reducing inserts for Mounting Device				for Ø d = 16				1		180902
Reducing inserts for Mounting Device				for Ø d = 25				1		180711
Interface Cables for Adjusting Gauges				for RS 232C interface				1	o	180829
Length Adjustment Gauge TRIBOS system				without interface cable				1	o	180828
Mounting Devices (automatic)								1	o	181159
Mounting Devices (manual)								1		180261

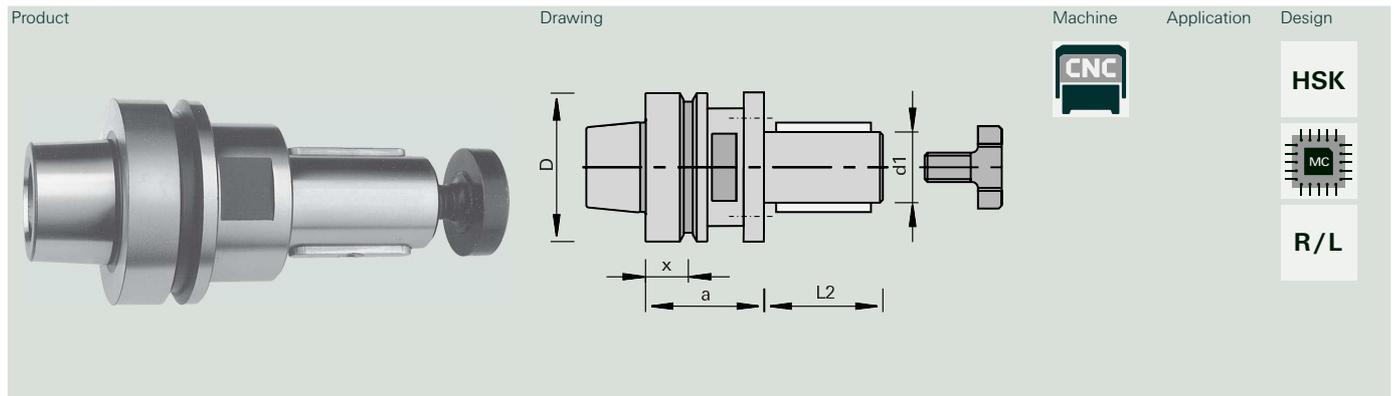
## Heat-Shrinking Chucks

<p>Product</p> 	<p>Drawing</p> 	<p>Machine</p> 	<p>Application</p>	<p>Design</p> <p><b>HSK</b></p> <p>max. <b>30.000</b> U/min</p>  <p><b>R/L</b></p>
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<p>Machine / Application</p> <ul style="list-style-type: none"> <li>• CNC machining centers with automatic tool changer</li> <li>• for precise clamping of shank-type tools with cylindrical shank</li> </ul>	<p>Design</p> <ul style="list-style-type: none"> <li>• n max = 30,000 min-1</li> <li>• interface DIN 69893 HSK 63 F</li> <li>• from high-quality hot work tool steel</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>• increased process safety, long edge lives and high machining quality thanks to very high concentricity and repeating accuracy (&lt; 0.003 mm)</li> </ul>	<p>Notes</p> <ul style="list-style-type: none"> <li>• for clockwise and counter-clockwise rotation</li> <li>• can be clamped and unclamped with all conventional shrinking devices</li> </ul>
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Product features								Order information		
Ø d1 [mm]	L2 [mm]	Ø d [mm]	Ø D [mm]	L1 [mm]	a [mm]	x [mm]	Weight [kg]	PU [pc.]	L	Order-No.
6,0	36	HSK 63F	20	100	75	18	0.797	1		186684
8,0	36	HSK 63F	20	100	75	18	0.790	1		186685
10	41	HSK 63F	26	100	75	18	0.840	1		183081
12	47	HSK 63F	28	100	75	18	0.830	1		183082
14	47	HSK 63F	28	100	75	18	0.870	1		183083
16	51	HSK 63F	28	100	75	18	0.850	1		183084
18	51	HSK 63F	30	100	75	18	0.960	1		183085
20	51	HSK 63F	30	100	75	18	0.930	1		183086
25	51	HSK 63F	30	100	75	18	0.860	1		183087
25	134	HSK 63F	36	185	160	18	1.943	1		185520

## Mounting Arbors with HSK shank



Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• CNC machining centers with automatic tool changer</li> <li>• for precise mounting of tools with bore with double keyway</li> </ul>	<ul style="list-style-type: none"> <li>• with 6 pin holes M6 - 8 mm deep TK 48 mm</li> <li>• interface DIN 69893 HSK 63 F</li> <li>• clamping length L2 = 50 mm for multiple-part cutters and cutterheads</li> <li>• secured against rotation with double key</li> </ul>	<ul style="list-style-type: none"> <li>• high feed rates thanks to optimum torque transfer</li> </ul>	<ul style="list-style-type: none"> <li>• for clockwise and counter-clockwise rotation</li> <li>• spacer ring Order-No. 181193 consists of: 1 piece 20 mm thick, 1 piece 10 mm thick, 3 piece 5 mm thick, 2 piece 2 mm thick, 1 piece 1 mm thick</li> <li>• spacer ring set Order-No. 181194 additionally 1 piece 20 mm thick, 1 piece 10 mm thick</li> <li>• tool attached with retaining bolt</li> <li>• included in delivery: clamping arbor with retaining bolt</li> </ul>

Product features							Order information			
Ø D [mm]	Ø d [mm]	Ø d1 [mm]	L2 [mm]	a [mm]	x [mm]	DKN [mm]		PU [pc.]	L	Order-No.
63	HSK 63F	30	50	45	18	8 x 3	Homag, IMA from 01/95	1		183748
63	HSK 63F	30	80	45	18	8 x 3	Homag, IMA from 01/95, HOLZ-HER	1		183749
63	HSK 63F	30	110	45	18	8 x 3	Homag, IMA from 01/95, HOLZ-HER	1		183747
Spare parts			Dimension [mm]					PU [pc.]	L	Order-No.
Spacer Sets			60x50x30					1		181193
Spacer Sets			60x80x30					1		181194
Cutter Retaining Bolts with centering ring			M16x38xØ48					1		184061
Single-Head Engineers Wrenches			SW46x10 DIN 894					1		178760

## Cone wiper

Product Drawing Machine Application Design





Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• for cleaning of the inner cones of the cone tool adaptors</li> </ul>			<ul style="list-style-type: none"> <li>• the highly precise machine spindle and clamping chuck needs dust-free fit</li> </ul>

Product features				Order information		
Ø d [mm]				PU [pc.]	L	Order-No.
HSK 63				1		180911

## Mounting device without clamping lever

Product Drawing Machine Application Design





Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• for quick and simple mounting and adjusting of cutting tools in draw-in collet chucks or on arbors and tool holders</li> </ul>	<ul style="list-style-type: none"> <li>• mounted on stable pedestal which can be fixed onto workbench</li> </ul>	<ul style="list-style-type: none"> <li>• simplest handling offering highest comfort thanks to roll clamping system, no clamping or jamming necessary</li> </ul>	<ul style="list-style-type: none"> <li>• for all adapters HSK 63 F</li> </ul>

Product features				Order information		
Ø d1 [mm]				PU [pc.]	L	Order-No.
HSK 63F				1		182467

# EXCHANGEABLE KNIVES / KNIVES

## CONTENTS

Turnover spurs

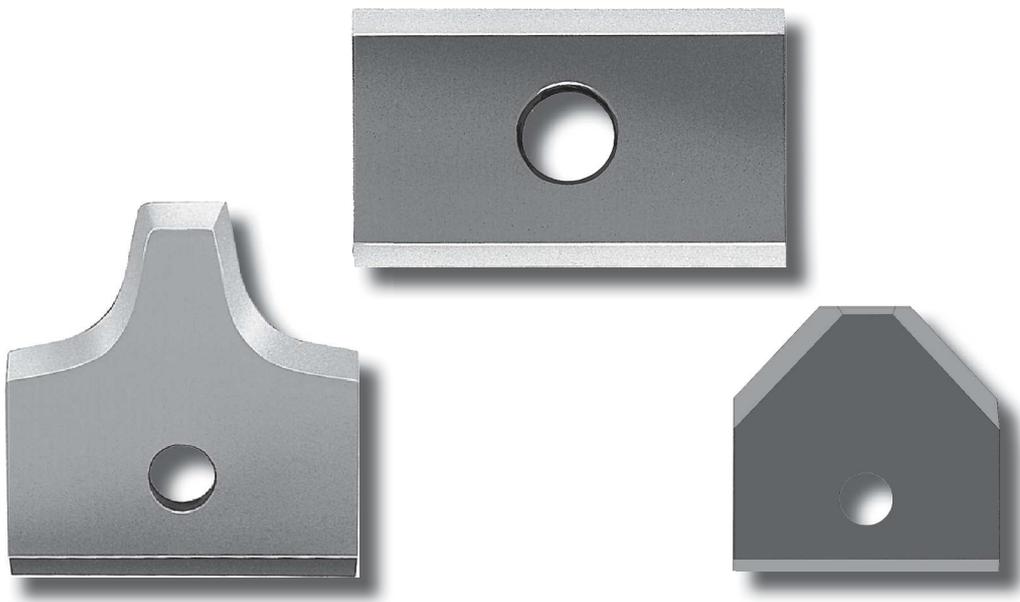
6-1

Mini turnover knives

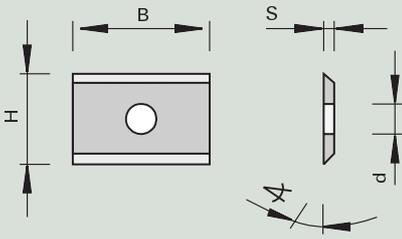
6-10

Portable planer turnover knives

6-11



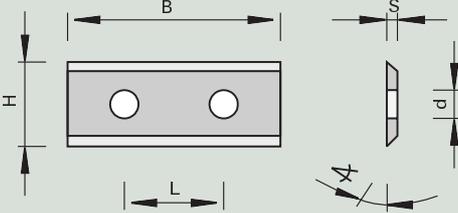
# HW Raker Turnover Knives

<b>Product</b> 	<b>Drawing</b> 	<b>Machine</b> 	<b>Application</b> 	<b>Design</b> 
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<b>Machine / Application</b>	<b>Design</b> <ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC05 for wood-based panels, plastics and hard woods</li> </ul>	<b>Advantages</b> <ul style="list-style-type: none"> <li>long edge lives and optimum cutting quality in solid woods</li> </ul>	<b>Notes</b> <ul style="list-style-type: none"> <li>packing unit 10 pieces</li> </ul>
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Product features							Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	Wedge∠ [°]	Cutting material			PU [pc.]	L	Order-No.
7,5	12	1,5	4,0	55	TC05			10		50820007
9,6	12	1,5	4,0	55	TC05			10		50820010
10,5	12	1,5	4,0	55	TC05			10		50450023
11	12	1,5	4,0	55	TC05			10		50450024
11,6	12	1,5	4,0	55	TC05			10	s	50820011
13	12	1,5	4,0	55	TC05			10		50450027
15	12	1,5	4,0	55	TC05			10		50820015
15,7	12	1,5	4,0	55	TC05			10		50450030
17	12	1,5	4,0	55	TC05			10		50450031
18	12	1,5	4,0	55	TC05			10	#	50450032
20	12	1,5	4,0	55	TC05			10		50820020

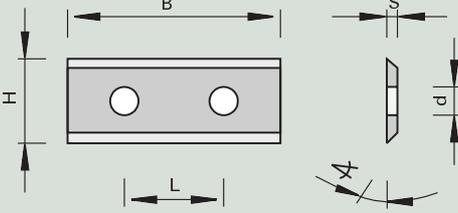
## HW Raker Turnover Knives

Product	Drawing	Machine	Application	Design
				 <b>HW TC05</b>

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC05 for wood-based panels, plastics and hard woods</li> </ul>	<ul style="list-style-type: none"> <li>long edge lives and optimum cutting quality in solid woods</li> </ul>	<ul style="list-style-type: none"> <li>packing unit 10 pieces</li> </ul>

Product features							Order information				
B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Wedge∠ [°]	Cutting material			PU [pc.]	L	Order-No.
30	12	1.5	4,0	14	55	TC05			10		50820030
40	12	1.5	4,0	26	55	TC05			10		50820040
50	12	1.5	4,0	26	55	TC05			10		50820050
60	12	1.5	4,0	26	55	TC05			10		50820060

## HW Raker Turnover Knives Micrograin quality for extremely long edge lives

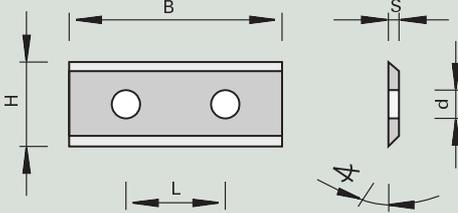
Product	Drawing	Machine	Application	Design
				 <b>LONG LIFE</b> <b>HW TC02</b>

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC02 for very long edge lives</li> </ul>	<ul style="list-style-type: none"> <li>long edge lives and optimum cutting quality in wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>packing unit 10 pieces</li> </ul>

Product features							Order information				
B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Wedge∠ [°]	Cutting material			PU [pc.]	L	Order-No.
30	12	1.5	4,0	14	55	TC02			10		50450100
50	12	1.5	4,0	26	55	TC02			10		50450101

## HW Raker Turnover Knives

HW micrograin quality for wood-based panels

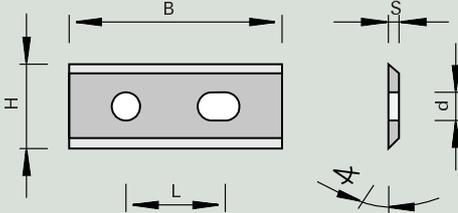
Product	Drawing	Machine	Application	Design
				 

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC06 for wood-based panels</li> </ul>	<ul style="list-style-type: none"> <li>long edge lives and optimum cutting quality in solid woods</li> </ul>	<ul style="list-style-type: none"> <li>packing unit 10 pieces</li> </ul>

Product features							Order information				
B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Wedge∠ [°]	Cutting material			PU [pc.]	L	Order-No.
30	12	1.5	4,0	14	55	TC06			10	#	50450170
50	12	1.5	4,0	26	55	TC06			10	s	50450171
60	12	1.5	4,0	26	55	TC06			10	s	50450172

## HW Raker Turnover Knives

With oblong hole

Product	Drawing	Machine	Application	Design
				 

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC06 for wood-based panels</li> <li>with oblong hole</li> </ul>	<ul style="list-style-type: none"> <li>long edge lives and optimum cutting quality in solid woods</li> </ul>	<ul style="list-style-type: none"> <li>packing unit 10 pieces</li> </ul>

Product features							Order information				
B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Wedge∠ [°]	Cutting material			PU [pc.]	L	Order-No.
80	13	2.2	4,0	60	55	TC06			10		50820080
100	13	2.2	4,0	60	55	TC06			10	s	50820100
120	13	2.2	4,0	60	55	TC06			10	s	50820120

## HW Raker Turnover Knives

End sharpened

Product	Drawing	Machine	Application	Design
				<p>HW TC05</p>

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC05 for wood-based panels, plastics and hard woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features							Order information				
B	H	S	Ø d	L	Wedgeα	Cutting material			PU	L	Order-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[°]				[pc.]		
50	12	1.7	4,0	37	55	TC05			10		50450121

## HW Raker Turnover Knives

For shank-type tools end sharpened

Product	Drawing	Machine	Application	Design
				<p>HW TC05</p>

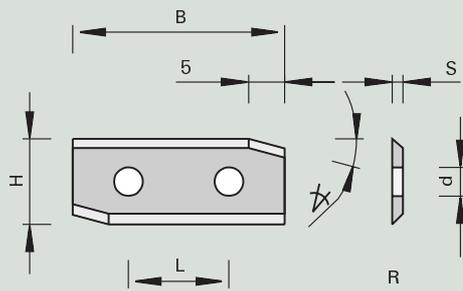
Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for use in shank-type cutters</li> </ul>	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC05 for wood-based panels, plastics and hard woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features							Order information				
B	H	S	Ø d	L	Wedgeα	Cutting material			PU	L	Order-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[°]				[pc.]		
29,5	12	1.5	4,0	14	55	TC05			10	s	50825004

## HW Raker Turnover Knives

With chamfer - HOLZ-HER

Product Drawing Machine Application Design





**HW  
TC06**

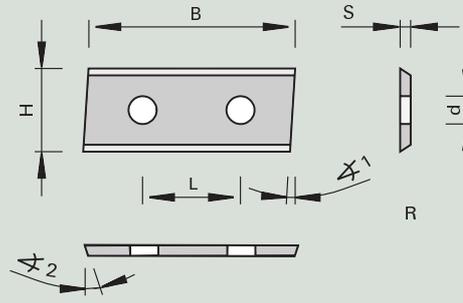
Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>machines HOLZ-HER</li> <li>for use in edge banding / jointing cutterheads</li> </ul>	<ul style="list-style-type: none"> <li>grinding angle 55 degrees</li> <li>cutting material: HW</li> <li>TC06 for wood-based panels, plastics and hard woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features							Order information				
Chamfer $\angle$ [°]	B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Cutting material	PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
15	29,5	12	1,5	4,0	14	TC06	10		50450290		50450291

## HW Raker Turnover Knives

End bevel and end sharpened

Product Drawing Machine Application Design





**HW  
TC05**

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for use in V-grooving cutterheads and prism cutterheads</li> </ul>	<ul style="list-style-type: none"> <li>grinding angle 55 degrees</li> <li>cutting material: HW</li> <li>TC05 for wood-based panels, plastics and hard woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features							Order information					
B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Clearance $\angle 1$ [°]	Clearance $\angle 2$ [°]	Cutting material	PU [pc.]	L	Order-No. [L]	L	Order-No. [R]
19,5	12	1,5	4,0		3,5	10	TC05	10	o	50450241	o	50450242
29,5	12	1,5	4,0	14	5		TC05	10		50450250		50450251
49,2	12	1,5	4,0	26	5		TC05	10		50450252		50450253

## HW Turnover Knives

Product		Machine	Application	Design

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• for use in cutterheads</li> </ul>	<ul style="list-style-type: none"> <li>• cutting material: HW</li> <li>• TCw30 for hard woods and soft woods</li> </ul>		

Product features			Order information			
		Cutting material		PU [pc.]	L	Order-No.
HWM221 Turnover Knives HW (hard wood)	21x21x5,5 4 cutting edges	TCw30		10		186668
HWM222 Turnover Knives HW (hard wood)	30x21x5,5 4 cutting edges	TCw30		6		50651530
HWM223 Turnover Knives HW (hard wood)	40x21x5,5 2 cutting edges	TCw30		6		50651540
HWM224 Turnover Knives HW (hard wood)	50x21x5,5 2 cutting edges	TCw30		6		50651550

## HW Raker Turnover Knives

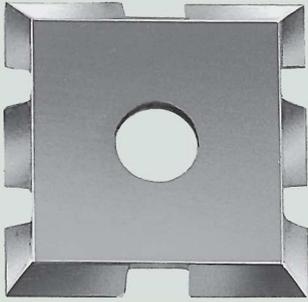
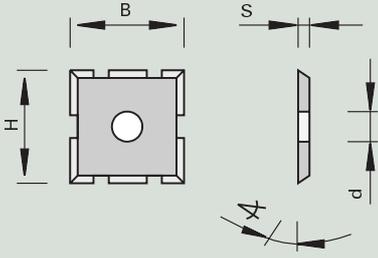
micrograin quality for solid wood

Product		Machine	Application	Design
				<p><b>LONG LIFE</b></p> <p><b>HW TCw20</b></p>

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>• cutting material: HW</li> <li>• TCw20 for solid woods</li> </ul>	<ul style="list-style-type: none"> <li>• long edge lives and optimum cutting quality in solid woods</li> </ul>	<ul style="list-style-type: none"> <li>• packing unit 10 pieces</li> </ul>

Product features							Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	L [mm]	Wedge∠ [°]	Cutting material		PU [pc.]	L	Order-No.
30	12	1.5	4,0	14	45	TCw20		10		50450080
40	12	1.5	4,0	26	45	TCw20		10		50450081
50	12	1.5	4,0	26	45	TCw20		10		50450082
60	12	1.5	4,0	26	45	TCw20		10		50450083

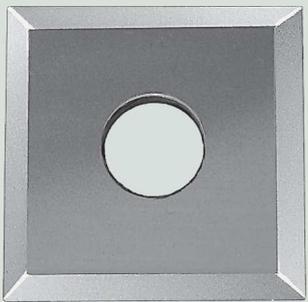
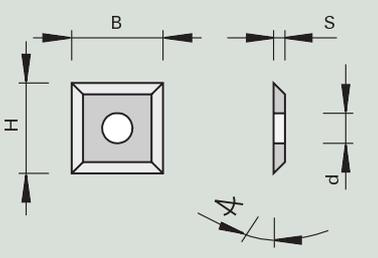
## HW Raker Turnover Knives

Product	Drawing	Machine	Application	Design
				 4  HW TCw20

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>chip breakers for optimum cut division</li> <li>cutting material: HW</li> <li>TCw20 for hard woods and soft woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features							Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	Wedge∠ [°]	Cutting material		PU [pc.]	L	Order-No.	
15	15	2.0	4,0	55	TCw20		10	o	50450230	

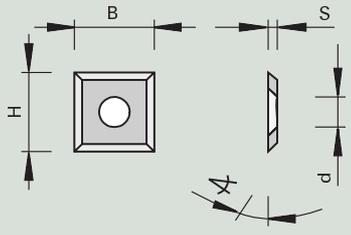
## HW Turnover Knives

Product	Drawing	Machine	Application	Design
		 		 4 

Machine / Application	Design	Advantages	Notes
	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC03 for wood-based panels and plastics</li> <li>TC05 for wood-based panels, plastics and hard woods</li> <li>TCw30 for hard woods and soft woods</li> <li>TCw40 for hard and soft woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features							Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	Wedge∠ [°]	Cutting material		PU [pc.]	L	Order-No.	
10,5	10,5	1,5	4,0	55	TCw30		10		50450180	
12	12	1,5	4,0	55	TC05		10		50820012	
12	12	1,5	4,0	55	TC03		10		50450026	
14	14	2,0	6,3	60	TCw30		10		50820014	
17	17	2,0	4,0	35	TC05		10		50450212	
19	19	2,0	4,0	55	TC05		10		50450213	

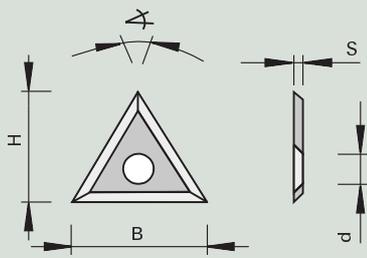
## HW Turnover Knives bore with countersink

<b>Product</b> 	<b>Drawing</b> 	<b>Machine</b>	<b>Application</b> 	<b>Design</b> 
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<b>Machine / Application</b> <ul style="list-style-type: none"> <li>• for use in cutterheads</li> </ul>	<b>Design</b> <ul style="list-style-type: none"> <li>• cutting material: HW</li> <li>• TCw25 for hard woods and soft woods</li> <li>• TCw40 for hard and soft woods</li> </ul>	<b>Advantages</b>	<b>Notes</b> <ul style="list-style-type: none"> <li>• packing unit: 10 pieces</li> </ul>
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Product features							Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	Wedge∠ [°]	Cutting material		PU [pc.]	L	Order-No.	
13,6	13,6	2,0	6,3	45	TCw40	Fischer Brugg		10	50450181	
14	14	1,2	8,6	60	TCw30			10	50450182	
14,3	14,3	2,5	6,3	55	TCw20	Homag		10	50450186	
15	15	2,5	6,4	60	TCw20	with rounded edges (R=50 mm for Ø D<100 mm)		10	50820017	

## HW Triangular Spurs

<b>Product</b>	<b>Drawing</b> 	<b>Machine</b>	<b>Application</b> 	<b>Design</b> 
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<b>Machine / Application</b> <ul style="list-style-type: none"> <li>• for use in Leitz cutterheads</li> </ul>	<b>Design</b> <ul style="list-style-type: none"> <li>• cutting material: HW</li> <li>• TCw20 for hard woods and soft woods</li> </ul>	<b>Advantages</b>	<b>Notes</b> <ul style="list-style-type: none"> <li>• packing unit: 10 pieces</li> </ul>
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Product features							Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	Corner∠ [°]	Cutting material		PU [pc.]	L	Order-No.	
22	19,05	2,0	6,5	60	TCw20			10	50450190	

# HW Grooving Turnover Knives

Product		Machine		Design	
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Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>• for use in grooving cutterheads</li> </ul>	<ul style="list-style-type: none"> <li>• cutting material: HW</li> <li>• TCw20 for wood-based panels, hard and soft woods</li> </ul>		<ul style="list-style-type: none"> <li>• Order-No. 50450220 for groove width 4 mm</li> <li>• Order-No. 50450221 for groove width 5 mm</li> <li>• Order-No. 50450223 for groove width &gt; 7 mm</li> <li>• packing unit 10 pieces</li> </ul>

Product features						Order information			
B [mm]	H [mm]	S [mm]	Ø d [mm]	Cutting material		PU [pc.]	L	Order-No.	
18	18	1.95	10	TCw20		10		50450220	
18	18	2.5	10	TCw20		10		50450221	
18	18	3.7	10	TCw20		10		50450223	

# HW Mini Turnover Knives

With back- and cross groove

Product		Machine	Application	Design
				<b>HW</b> <b>TC05</b>

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>for use in shank-type cutters</li> </ul>	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TC05 for wood-based panels, plastics and hard woods</li> </ul>		<ul style="list-style-type: none"> <li>packing unit: 10 pieces</li> </ul>

Product features			Order information				
B [mm]	H [mm]	S [mm]			PU [pc.]	L	Order-No.
20	4.1	1.1			10		50450150
20	5.5	1.1			10	#	50450151
25	5.5	1.1			10		50450152
30	5.5	1.1			10		50450153
40	5.5	1.1			10	s	50450154
50	5.5	1.1			10		50450155

# HW **Portable Planer Turnover Knives** end bevel

Product Drawing Machine Application Design

Machine / Application	Design	Advantages	Notes
<ul style="list-style-type: none"> <li>portable planers</li> </ul>	<ul style="list-style-type: none"> <li>cutting material: HW</li> <li>TCw40 for hard and soft woods</li> </ul>		<ul style="list-style-type: none"> <li>Order-No. 50400212 can only be used in the original ELU clamping element</li> <li>minimum order quantity 10 pieces</li> <li>packing unit 2 pieces in a bag</li> </ul>

Product features				Order information			
B [mm]	H [mm]	S [mm]	Clearance $\sphericalangle$ 1 [°]		PU [pc.]	L	Order-No.
75,5	5.5	1.1	1.5	AEG HTH 75, Bosch O590, P400, 1590, 1591, Festo REP 75, Haffner FH 222, HOLZ-HER 2223, 2286, 2320, Kress Jet Star 6701, Mafell HU 75, Metabo 6375, Scheer MH 80, MH 75/3, Skil 98 H		2	o 58400210
80,5	5.9	1.2	8	ELU MFF 80		2	58400212
82	5.5	1.1	3	AEG, Fein, Haffner, Hitachi, Mafell, Makita, Metabo, Bosch		2	58400214
102	5.5	1.1	3	AEG EH 102, HB 750		2	o 50400215



# ABRASIVE

## APPLICATION INFORMATION

- 1 Tools which are marked with a red   in the table head of the products are generally suited for the use in abrasive materials.
- 2 Acrylic bound mineral fiber boards (artificial marble) can be machined with HW and DP.
- 3 For materials with large mineral particles, due to the risk of tooth breaking, HW can be used.
- 4 Machining information for selected materials (The respective formulas and further information can be found in the prefix chapter "Technical Appendix"):

- **Cutting speed  $V_c$ :**

- ▶ Fibre cement board: 40 – 60 m/s
- ▶ Gypsum plaster board: 45 – 65 m/s
- ▶ Gypsum plaster board: 45 – 65 m/s
- ▶ HPL: 50 – 70 m/s
- ▶ GFK: 20 – 50 m/s

- **Feed rate per tooth  $f_z$  / saw blades:**

- ▶ Fibre cement board: 0.02 – 0.05 mm
- ▶ Gypsum fibre board: 0,1 – 0,25 mm
- ▶ Thermoset: 0.03 – 0.05 mm
- ▶ Acrylic based mineral fibre board: 0.03 – 0.05 mm
- ▶ GFK: 0.01 – 0.03 mm

- **Feed rate per tooth  $f_z$ :**

- ▶ Shank-type cutters: > saw blades
- ▶ Cutters with bore: >> shank-type cutters

- Please observe the information of further influences on  $V_c$  and  $f_z$  by materials, the tool choice and the machine condition in the prefix "General Machining Information". They help to define if you should orient yourself towards the lower or upper area of the indicated range.

- 5 In the case of composite materials, often one or more abrasive components are included. If the optimal machining parameter are unknown it is useful to chose "the most difficult to machine component" which is normally the most abrasive component.

# CONSTRUCTION

## APPLICATION INFORMATION

- 1 Tools marked with an orange   in the table head of the products are generally suitable for the application on the construction site. Saw blades marked with orange on the package according to the colour coding system are suitable for soiled materials as well as wood with nails etc.
- 2 The calculation of  $V_c$  and  $f_z$  for handheld machines pointless as the mobile machines are normally operated with manual feed and the parameter (e.g. RPM) are not adjustable. In this case you have to test and follow your "feeling" as the machine operator feels the cutting pressure and noise level directly. This is why the prefix lists only a few concrete application parameter. Nevertheless, here too, the same basic principles apply which can be read in the respective chapter prefix.
- 3 For the machining of soft materials for insulation and sound insulation, tools with high number of teeth should be chosen.
- 4 Areatec concrete blocks can be easily cut by means of the DP portable saw blades.
- 5 Application parameter for materials in the area facade, roofing, walls, ceiling, acoustics, sound insulation, flooring, residential construction can be found in the chapters Abrasive, Wood, Panels, Aluminium or Plastic. This is why they are not listed separately.
- 6 Cutting speed  $V_c$ :
  - The harder the material to be machined, the lower  $V_c$
  - The softer the material to be machined, the higher  $V_c$
  - Deviating examples:
    - ▶ Rock wool panels: 2 – 8
- 7 In the case of composite materials, often one or more abrasive components are included. If the optimal machining parameter are unknown it is useful to chose "the most difficult to machine component".

**1** Solid wood is the basis of the woodworking sector. This chapter lists tools (with few exceptions) for the machining of dried wood, i.e. after saw mill processing. If you need tools for saw mills, please contact the specialist Stehle staff directly.

**2** Tools which are marked with a yellow   in the table head of the products are generally suited for the use in solid wood and similar materials.

**3** This catalogue does not include our extensive range of finger joint products which Stehle produce for the production of quality laminated timber, gluelam construction timber and solid wood boards. In this instance, please contact our specialists.

**4** General machining information for solid wood:

- Wet wood should be sawn with a low number of teeth (cutting quality is normally no criterion).
- Glued laminated timber (BSH/KVH) can be machined like solid wood.
- The feed rate per tooth  $f_z$  for thermotreated wood should follow the  $f_z$  of the original wood.
- The  $f_z$  for cork can be like the  $f_z$  of soft wood.
- Cutting with the grain requires a higher  $f_z$  than cutting across the grain.
- Continuous cutting edges lead to a better cutting quality in homogeneous materials (e.g. finish cut in solid wood) than interrupted cutting edges.
- As there is no pre-splitting effect, milling with the feed in solid wood leads to an improved surface quality compared to milling against the feed; however, there are more problems with dust extraction and cutting pressure (increase in power consumption. (Milling with the feed is not permitted on spindle shapers)
- Milling with the feed is applied in the case of finishing of solid wood edges or in grooving operations

# WOOD

## APPLICATION INFORMATION

**5** Machining information for selected materials (The respective formulas and further information can be found in the prefix: „Technical Appendix“):

- **cutting speed  $V_c$ :**
  - ▶ Soft wood: 60 – 100 m/s
  - ▶ Hard wood: 60 – 100 m/s
  - ▶ Exotic hard wood: 50 – 85 m/s
  - ▶ Veneer: 70 – 100 m/s
  - ▶ Highly compressed wood: 40 – 65 m/s
- **Feed rate per tooth  $f_z$  / saw blades:**
  - ▶ Hard wood longitudinal cut: 0.1 – 0.4 mm
  - ▶ Hard wood cross cut: 0.05– 0.09 mm
  - ▶ Soft woods
    - ▶ Longitudinal cut: 0.15 – 0.7 mm
    - ▶ Wet soft wood longitudinal cut: 0.3 – 0.9 mm
    - ▶ Soft wood cross cut: 0.1 – 0.2 mm
- **Feedrate per tooth  $f_z$  /planing cutterheads:**
  - ▶ Finishing quality: 1.0 – 1.5 mm
  - ▶ Middle quality: 1.5 – 2.5 mm
  - ▶ Roughing quality: 2.5 – 5.0 mm
- **Feedrate per tooth  $f_z$  /universal milling:**
  - ▶ Finishing quality: 1.0 – 1.5 mm
  - ▶ Middle quality: 1.5 – 2.5 mm
  - ▶ Roughing quality: 2.5 – 5.0 mm
- **Feedrate per tooth  $f_z$  /CNC shank-type cutters:**
  - ▶ Solid wood: 0,2 – 0,3 mm

**6** In the case of composite materials, often one or more components with specific requirements are included. If the optimal machining parameter are unknown it is useful to chose "the most difficult to machine component". Normally, this is not solid wood.

**1** In the meantime, panel processing is the focus of activity for residential construction, shopbuilders, trade show display manufacturers and furniture manufacturers. Many machines are perfectly adapted for this task.

**2** Tools which are marked with a green   in the table head of the products are generally suited for the use in wood-based panels

**3** General machining information for wood-based panels:

- In general, wood-based panels can be machined with HW cutting edges; DP cutting edges are ideal if the volume to be machined or abrasive coatings or components make them economical.
- Due to the production process, wood-based panels often include sand and other dirt particles. As these lead to faster blunting of the tools DP cutting edges are increasingly used in series production.
- For the production of wood-based panels old wood is recycled to an increasing extent. Pollution and other residuals can cause chipped edges on DP tools.
- Continuous cutting edges lead to a better cutting quality in homogeneous materials (MDF) than interrupted cutting edges.
- Plywood requires tools which are suitable for cutting along and across the grain at the same time. The cutting edges normally wear due to the high amount of glue.
- In the case of laminated wood-based panels the tool choice depends on the coatings.
- An increase of cutting quality of the top and bottom edge of laminated wood-based panels can be reached thanks to opposing shear angles.
- The thinner the coating of a wood-based panel the more aggressive tooth configurations should be chosen for saw blades and the larger the shear angle should be chosen for milling tools.

# PANELS

## APPLICATION INFORMATION

**4** Machining information for selected materials (The respective formulas and further information can be found in the prefix: „Technical Appendix“):

- **Cutting speed  $V_c$ :**
  - ▶ Particle board veneered on both sides: 60 – 90 m/s
  - ▶ Multiplex: 40 – 65 m/s
  - ▶ Directly laminated melamine particle board: 60 – 80 m/s
  - ▶ Raw particle board: 50 – 80 m/s
  - ▶ Hardboard: 50 – 80 m/s
  - ▶ Softboard: 60 – 100 m/s
  - ▶ Foil coated particle board: 60 – 80 m/s
  - ▶ MDF: 60 – 80 m/s

- **Feed rate per tooth  $f_z$  / saw blades:**
  - ▶ OSB board: 0.12 – 0.2 mm
  - ▶ Veneered panel: 0.02 – 0.09 mm
  - ▶ Wood core plywood: 0.03 – 0.12 mm
  - ▶ Melamine coated particle board: 0.04 – 0.06 mm
  - ▶ HPL coated particle board: 0.02 – 0.1 mm
  - ▶ Plywood: 0.04 – 0.1 mm
  - ▶ Hardboard: 0.03 – 0.07 mm
  - ▶ Pressed laminated wood: 0.02 – 0.05 mm

- **Feedrate per tooth  $f_z$  / grooving tools:**
  - ▶ Raw particle board: 0.4 – 0.75 mm
  - ▶ Veneered particle board: 0.1 – 0.15 mm
  - ▶ Laminated particle: 0.18 – 0.38 mm
  - ▶ Middle layer wood-based panels: 0.3 – 0.65 mm

- **Feedrate per tooth  $f_z$  /universal milling:**
  - ▶ Finishing quality: 1.0 – 1.5 mm
  - ▶ Middle quality: 1.5 – 2.5 mm
  - ▶ Roughing quality: 2.5 – 5.0 mm

- **Feedrate per tooth  $f_z$  /CNC shank-type cutters:**
  - ▶ Solid wood and veneered-panels: 0.2 – 0.3 mm
  - ▶ Wood particle boards: 0.25 – 0.35 mm
  - ▶ Wood fibre boards: 0.25 – 0.3 mm

**5** In the case of composite materials, often one or more abrasive or deviating components are included. If the optimal machining parameter are unknown it is useful to chose "the most difficult to machine component". Normally, this is not the wood-based panel.

1 Tools which are marked with a blue   the table head of the products are generally suited for the use in NF-metals.

2 General machining information for aluminum and NF-metals:

- When processing NF metals, pay attention to hot chips.
- Aluminum with a low percentage of silicate can be machined with HW cutting edges. An increasing silicate share causes high wear and makes DP cutting edges more efficient.
- When cutting aluminum, due to the danger of rebound, handheld chop and table saws should be equipped with saw blades with negative hook angle. Positive hook angles should be used only with tight material clamping and an appropriate entrance angle.
- Continuous cutting edges lead to a better cutting quality in homogeneous materials (aluminum) than interrupted cutting edges.
- The cutting speed of shank-type cutters depend on the cutter diameter; the larger the  $\varnothing$ , the higher the cutting speed.
- The cutting speed of shank-type cutters also depends on the mode of application. In the case of finish-cutting it should be higher than in the case of roughing.
- Compared to finish-cutting, high-speed processing requires cutting speeds increased by approx. 12% and a decidedly lower feedrate per tooth  $f_z$ .
- The harder anodized aluminum, the  $< f_z$
- The higher the hogger volume, the  $< f_z$

# ALUMINUM

## APPLICATION INFORMATION

**3** Machining information for selected materials (The respective formulas and further information can be found in the prefix: „Technical Appendix“):

<ul style="list-style-type: none"> <li>• <b>Cutting speed <math>V_c</math> / saw blades:</b> <ul style="list-style-type: none"> <li>▶ Pure aluminum: 60 – 80 m/s</li> <li>▶ Anodized aluminum: 40 – 60 m/s</li> <li>▶ Al-Si alloy: 15 – 40 m/s</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Cutting speed <math>V_c</math> / shank-type cutters:</b> <ul style="list-style-type: none"> <li>▶ Pure aluminum: 3 – 7.5 m/s</li> <li>▶ Al-Si alloy (&lt; 10% Si content): 6 – 9.5 m/s</li> <li>▶ Al-Si alloy (&gt; 10% Si content): 5 – 8 m/s</li> <li>▶ Copper / brass / bronze: 2.5 – 5.8 m/s</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Feed rate per tooth <math>f_z</math> / saw blades:</b> <ul style="list-style-type: none"> <li>▶ Aluminum wrought alloy: 0.02 – 0.1 mm</li> <li>▶ Aluminum casting alloy: 0.01 – 0.05 mm</li> <li>▶ Thin-walled profiles / sheets (&lt; 2mm): 0.02 – 0.04 mm</li> <li>▶ Thick-walled profiles / sheets: 0.04 – 0.18 mm</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Feedrate per tooth <math>f_z</math> / grooving tools:</b> <ul style="list-style-type: none"> <li>▶ NF metals: 0.02 – 0.05 mm</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Feedrate per tooth <math>f_z</math> / shank-type tools:</b> <ul style="list-style-type: none"> <li>▶ Pure aluminum: 0.12 – 0.3 mm</li> <li>▶ Al-Si alloy (&lt; 10 % Si content): 0.01 – 0.3 mm</li> <li>▶ Al-Si alloy (&gt; 10 % Si content): 0.02 – 0.3 mm</li> <li>▶ Copper / brass / bronze: 0.03 – 0.24 mm</li> </ul> </li> </ul>

**4** In the case of composite materials, often aluminum or NF metal components are included. If the optimal machining parameter are unknown it is useful to chose "the most difficult to machine component". As this is often aluminium, tools from this chapter are also used for composite materials.

# STEEL

## APPLICATION INFORMATION

- 1 Tools listed in the catalog are suitable for residential construction companies, shop builders and trade show display manufacturers who deal with steel now and then or for the machining of composite materials with steel / stainless steel components. They are not suitable for pure metal working companies.
- 2 Even if some of the saw blades can be used on Dry-Cut machine, they are mainly designed for woodworking machines.
- 3 Ferrous metals / steel are certainly the limiting factor for the use of woodworking tools. Thus, for this combined use, cutting materials and tooth geometries were chosen which meet more or less the demands of wood-based panels as well as steel.
- 4 Block material should not be processed with these tools. The thickness of profiles and metal sheets should not exceed 3 mm.

- 5 Tools which are marked with a grey   in the table head of the products are suited on a limited basis for the use in steel and stainless steel.

- 6 Machining information for selected materials (The respective formulas and further information can be found in the prefix: „Technical Appendix“):

- Cutting speed  $V_c$  / saw blades:
  - ▶ Steel: 40 – 60 m/s
  - ▶ Stainless steel: 30 – 45 m/s
  - ▶ Designed for manual feed ( 2 – 7 m/min)

- 7 recommended RPM for our programm:

- 1/min (RPM):
  - ▶ Ø160 = 2750 min-1
  - ▶ Ø190 = 2350 min-1
  - ▶ Ø216 = 2050 min-1
  - ▶ Ø230 = 1950 min-1

- 1/min (RPM):
  - ▶ Ø250 = 1750 min-1
  - ▶ Ø305 = 1500 min-1
  - ▶ Ø355 = 1250 min-1

- 8 In the case of composite materials, often steel or stainless steel components are included in one or the other way. The basic rule to choose the most difficult to machine component for orientation is most relevant in this case. If steel / stainless steel components are included, they will be the decisive component as pure woodworking tools are damaged when they come into contact with steel. This is why tools listed in this chapter are also used for composite materials.

# PLASTIC

## APPLICATION INFORMATION

- 1 Plastics have become an integral part of the woodworking trade. They appear in pure form and in composite materials.
- 2 Often plastics are so much integrated in composite materials that they are no longer even perceived as such. Just think of laminated panels or porch panels made from WPC. The application parameter for HPL laminated particle boards can be found in the chapter PANEL, however, they can also be derived from the pure form in the chapter PLAST.
- 3 Plastics can be distinguished in three groups with different machining conditions: the thermoplastics, the thermosets as well as the elastomeres. In addition, there are composite materials, whose variety is almost unlimited by now, not only combined with wood-based panels, metals, glass, etc. but also in combination with each other.
- 4 Tools which are marked with a purple   in the table head of the products are generally suited for the use in plastics (however the differences between plastics e.g. thermoset and thermoplastic are so huge that they are not necessarily ideal for both)

- 5 General machining information for plastics:

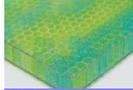
- Thermoplastic and elastomeres can generally be machined with HW cutting edge.
- From the economic point of view, Thermosets should be machined with DP cutting edges.
- Thermoplastic can be machined with low cutting speed.
- As soon as plastics begin to smear or agglutinate: reduce RPM.
- Continuous cutting edges lead to a better cutting quality in homogeneous materials such as block plastics than interrupted cutting edges.
- Fibre-reinforced plastics (GFK, CFK, AFK) require very stable tools. In the case of shank-type cutters generally choose a VHW tool body.
- In the case of fibre-reinforced plastics (GFK, CFK, AFK) reduce RPM on CNC machining centers to 8,000 - 12,000 1/min if possible.
- The machining of polypropylene (PP) creates voluminous chips; thus, tools with large gullets and a low number of teeth should be chosen.
- Postprocessing of brilliant surfaces and block materials such as acrylic glass (PMMA) can be made with Monodia tools with optimal finish.

## 6 Machining information for selected materials (The respective formulas and further information can be found in the prefix: „Technical Appendix“):

- **Cutting speed  $V_c$ :**
  - ▶ Polycarbonate / acetate: 6 – 8 m/s
  - ▶ PVC: 2,5 – 4 m/s
  - ▶ PMMA: 6 – 8 m/s
  - ▶ HPL solid core panels: 15 – 50 m/s
  - ▶ Phenolic resin material: 1.5 – 3.5 m/s
  - ▶ High-pressure laminated boards: 50 – 70 m/s
  - ▶ HPL: 50 – 70 m/s
  - ▶ GFK: 20 – 50 m/s
- **Feed rate per tooth  $f_z$  / saw blades:**
  - ▶ Thermoplastic-solid core panels: 0.05 – 0.1 mm
  - ▶ HPL solid core panels: 0.01 – 0.05 mm
  - ▶ Acrylic based mineral fiber board: 0.03 – 0.05 mm
  - ▶ GFK: 0.01 – 0.03 mm
- **Feed rate per tooth  $f_z$  / grooving tools:**
  - ▶ Thermoplastics: 0.2 – 0.5 mm
  - ▶ Thermoset: 0.03 – 0.05 mm
- **Feed rate per tooth  $f_z$  / CNC shank-type cutters:**
  - ▶ Thermoplastics: 0,2 – 0.3 mm
  - ▶ Polycarbonate / acetate: 0.12 – 0.6 mm
  - ▶ PVC: 0.12 – 0.6 mm
  - ▶ PMMA: 0.12 – 0.6 mm
  - ▶ Phenolic resin material: 0.12 – 0.6 mm
  - ▶ Laminate: 0.2 – 0.3 mm
  - ▶ HPL solid core panels: 0,2 – 0.3 mm
  - ▶ Acrylic bound mineral fibre board: 0.01 – 0.25 mm
  - ▶ GFK, CFK, AFK: 0.05 – 0.15 mm
  - ▶ Elastomers: 0.2 – 0.3 mm

## 7 In the case of composite materials, often one or more plastic components are included. If the optimal machining parameter are unknown it is useful to chose “the most difficult to machine component”. This can be plastic, e.g. if GFK components are included, thermoplastic melts or an elastomer tears instead of being cleanly cut.

# MATERIAL SUITABILITY

									<b>ABRASIVE CONSTRUCTION</b>
Gypsum fibre board	Gypsum fibre board with MDF	Gipsfaserplatte mit Furnier	Gypsum plaster board	Fibre cement board	Wood fibre	Mineral wool / clay	GFK Gitterrost	Gasbetonstein	
									<b>WOOD</b>
Wood with nails	Mineral wool / clay	Gypsum fibre board	Fibre cement	Polyethylene	Wood fibre	Cement soiled boards	Gasbetonstein	Polyethylene	
									<b>PANELS</b>
Round wood	Board material	Beams	Battens	Planed material	Jointed material	Firewood	Gluelam construction timber	Quality laminated timber	
									<b>ALUMINIUM</b>
Veneered laminated wood	Glued laminated timber boards	Oak	Beech	Larch	Bangkirai	Coconut	Spruce	Poplar	
									<b>STEEL</b>
Balsa	Ash	Fir	Cork						
									<b>PLASTIC</b>
Plywood	Multiplex	Wood core plywood	OSB/ Particle board	Raw particle board	Veneered particle board	Melamine laminated particle board	CPL laminated acoustic particle board	HPL laminated particle board	
									<b>ALUMINIUM</b>
High gloss foiled particle board	(Soft) Fibre board	Raw MDF	Lacquered MDF	Twin-wall panel	Lacquered MDF profile	Hardboard	Flooring panel	Construction profile	
									<b>STEEL</b>
Honeycomb panel	Blockboard	MDF-Polystyrene panel	Holz-PMMA	Wood core plywood					
									<b>STEEL</b>
Block material	Hollow profile	Honeycomb panel	Foam	Zinc	Copper	Alu polyethylene	Ali HPL	Ali sandwich board with PU filling	
									<b>PLASTIC</b>
Steel	Steel	Stainless steel wall board	Square tube	Stainless steel sun protection	Steel grid	Iron covered particle board	Steel sandwich board with PU filling	Steel-plastic acoustic element	
									
PMMA - block material	PMMA - acrylic glass	PC (polycarbonate)	PE block material	PS (polystyrene)	PVC - vinyl flooring	PET honeycomb core	HPL laminate	Rubber	



# TECHNICAL APPENDIX

# Product Information / Technical Information

## 1 CUTTING MATERIAL

### — TUNGSTEN CARBIDE (HW)

- The cutting material tungsten carbide is available in different versions for various applications and workpiece materials. They differ in their mixture including binder type, grain size, density, hardness, toughness and bending strength. The tungsten carbide for Stehle HW Saw Blades is designed and optimized for the processing of the respective material classes.
- HW cutting materials according to the Stehle nomenclature begin with the abbreviation TC. It is followed by a letter and ends with a two-digit number.

- The following basic rules apply:

- ▶ The smaller the figure in the denomination, the harder the cutting material (the longer the edge life).
- ▶ The higher the figure, the higher the bending strength (the smaller the risk of breaking).
- ▶ The smaller the grain size, the harder the cutting material and the higher the bending strength and toughness.

- Material orientation:

- ▶ The letter "w" in the denomination (after TC and in before the figure) means "wood" and describes cutting materials especially for solid wood.
- ▶ The letter "m" stands for metals (aluminium and steel).
- ▶ „x" stands for Cermet, a metallurgical/ceramic composite material with the ceramic advantages of hardness and temperature resistance Cermet is applied for extremely demanding applications in steel.

### — POLYCRYSTALLINE DIAMOND (DP)

- DP cutting edges are produced synthetically and the diamond coating is sintered on a carrying layer of tungsten carbide. Both are soldered on the tool body.
- DP is 2-3 times harder than tungsten carbide and reaches a multiple of edge lives in suitable materials. At the same time, due to its lower bending strength, DP is more susceptible to tooth breakage than HW. Thus it is not suited for all materials.
- During the past decades, DP established itself in chipboard and fibre boards as well as in abrasive materials and thanks to its economic efficiency has become an integral part of the woodworking industry.

### — MONOCRYSTALLINE DIAMOND (DM)

- DM has very limited application possibilities for the machining of wood as well as plastics and composite materials.
- Stehle offers DM tools for the postprocessing of PMMA (acrylic glass) on machining center.

### — HIGH-SPEED STEEL (HS)

- This is the traditional cutting material for the machining of solid wood, especially soft wood. Stehle offers HS tools to produce Tongue and Groove profiles, Round Dowels and Serrated Dowels as well as for Planning and Moulding.
- Planning knives with a long life coating can achieve double, or even multiple edge lives in suitable materials.

**2** To reach optimal **cutting quality** and excellent **edge lives** the machining parameter must be adapted to the workpiece materials. An experienced machine operator will feel it in his bones whether the application parameters used are correct. Watching the shape and size of the chips, vibrations and noise levels often is the easiest way in order to approach optimum parameters and use of the tool on the particular machine.

**3** Guidelines for an optimal result can be derived from the **cutting speed** and the **feedrate per tooth**. These depend on the type of tool (mode of application), the diameter of the tool and the material to be machined. On this basis the parameters which the machine operator can influence, the RPM and the feed rate, can be calculated usually. They also serve as an aid for the selection of the right tool.

**4** Basis **cutting speed  $V_c$**  (in m/sec):  
 The cutting speed calculation determines the optimal RPM for a specific material with a given tool diameter.  
 The formula is as follows:

$$n = \frac{V_c \times 1.000 \times 60}{\pi \times D}$$

- **Calculation example:**
  - ▶ Workpiece material: melamine-laminated particle board  
 $V_c = 60\text{--}80$  m/sec
  - ▶ Machine/application: sizing cut on table saw
  - ▶ Applied tool: saw blade with diameter 300 mm
  - ▶ Calculation:  

$$n = \frac{70 \times 1.000 \times 60}{3,14 \times 300} = 4.458 \text{ 1/min}$$
  - ▶ **Result:**  
 The ideal RPM for excellent cutting quality and edge life is approx. 4,500 1/min, which is typical for a table saw.
- The only variable which can be changed with a given material is the tool diameter.
- For the cutting speed there are no rigid figures but a recommended range based on experience. These ranges are listed in the respective tables. The figures apply for HW saw blades. For HW cutters the figures are lower by 10-15%.
- **Factors influencing  $V_c$  :**
  - ▶ The harder the material to be machined, the lower  $V_c$
  - ▶ The softer the material to be machined, the higher  $V_c$

## 5 Basis feed rate per tooth $f_z$ (in mm):

The calculation of the feed rate per tooth determines the optimal feed  $V_f$  for a specific material with given RPM and number of teeth. The formula is as follows:

$$V_f = \frac{f_z \times n \times Z}{1,000}$$

- **Calculation example:**
  - ▶ Material to be machined: solid oak  $f_z = 0,2$  mm
  - ▶ Machine/Application: grooving on CNC machining center  $n = 18,000$
  - ▶ Applied tool: saw blade with diameter 300 mm
  - ▶ Calculation:

$$V_f = \frac{0,2 \times 18.000 \times 2}{1.000} = 7,2 \text{ m/min}$$

- ▶ **Result:**  
With  $Z = 2$  a feed or approx. 7 m/min is recommended. If a higher feed is desired it can be obtained by means of a higher RPM, e.g. 24,000 1/min. With this RPM the feed would reach 9.6, i.e. approx. 10 m/min with constant cutting quality and edge life. In addition (or alternatively) a tool with 3 cutting edges can be used. Then the feed reaches approx. 15 m/min.
- The changeable variables with a given material are thus the RPM and the number of cutting edges of the tool. Ideally, the RPM should be defined previously by the calculation of cutting speed.
- As for the cutting speed there are no rigid figures for  $f_z$  as well but a recommended range based on experience. These ranges are listed in the respective tables. The chapter introductions give recommendations with regard to  $f_z$  for the different materials. They also list the factors which can influence these values.

## 6 Factors influencing $f_z$ :

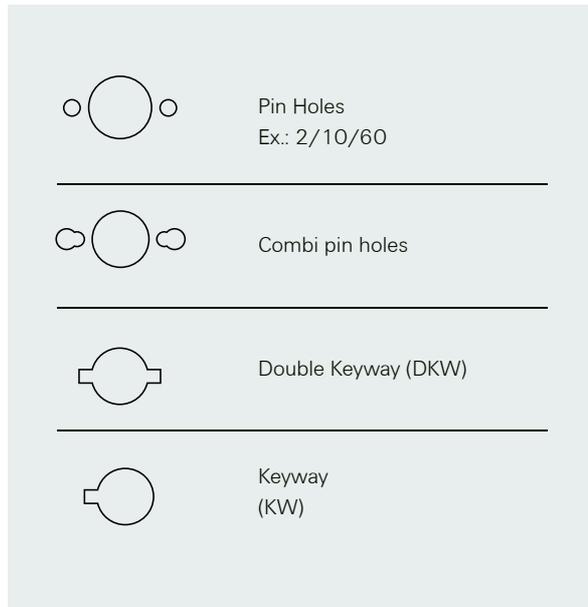
- Within a material category there can be clear differences depending on the material consistency; thus the standard values are not binding.
- The "heavier" the machining process, the <  $f_z$ .
- In the case of composite materials, the most abrasive, toughest, hardest" material determines  $f_z$ .
- An increasing  $f_z$  reduces the edge life of the cutting edge.

## 7 General influences on the cutting quality:

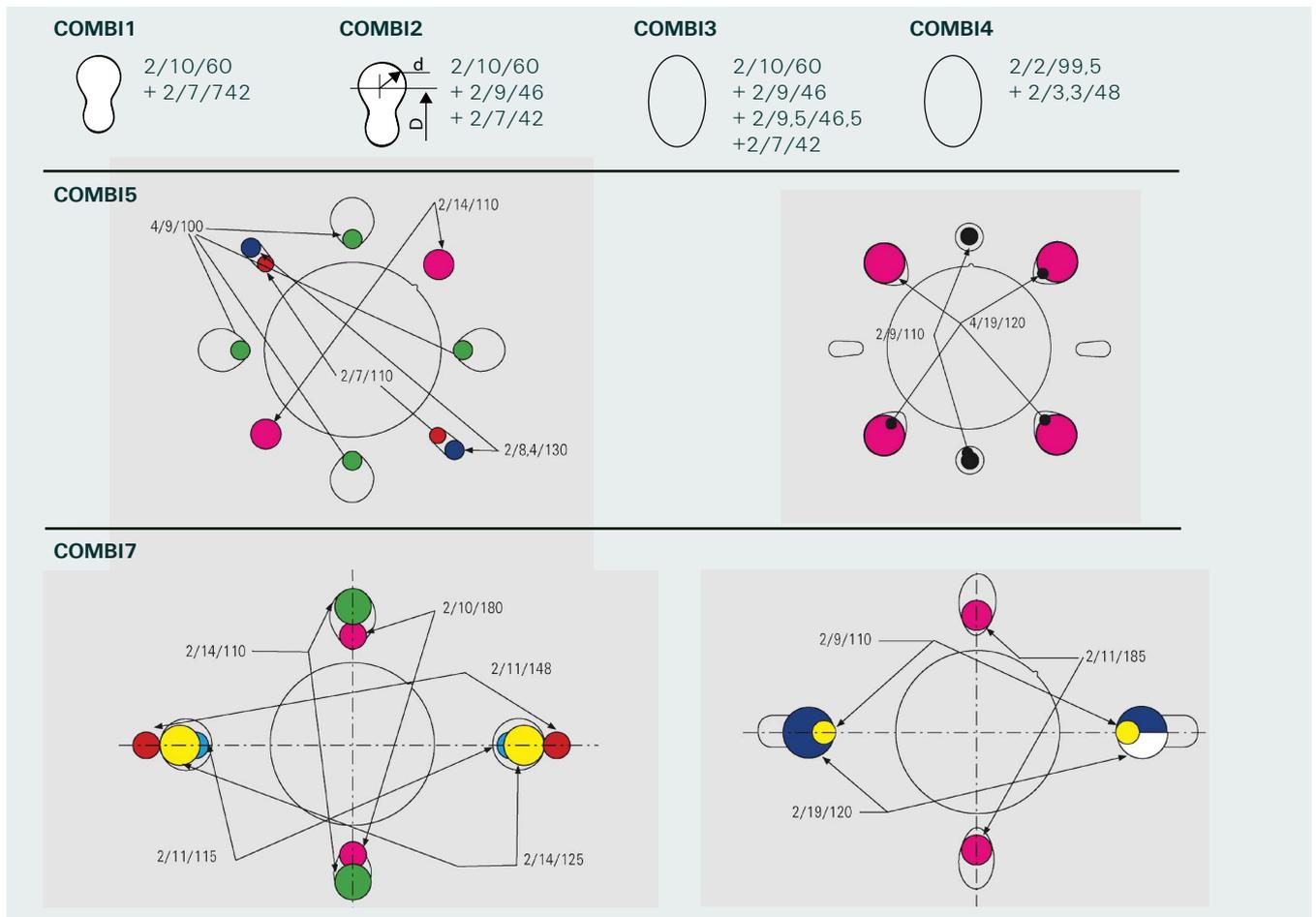
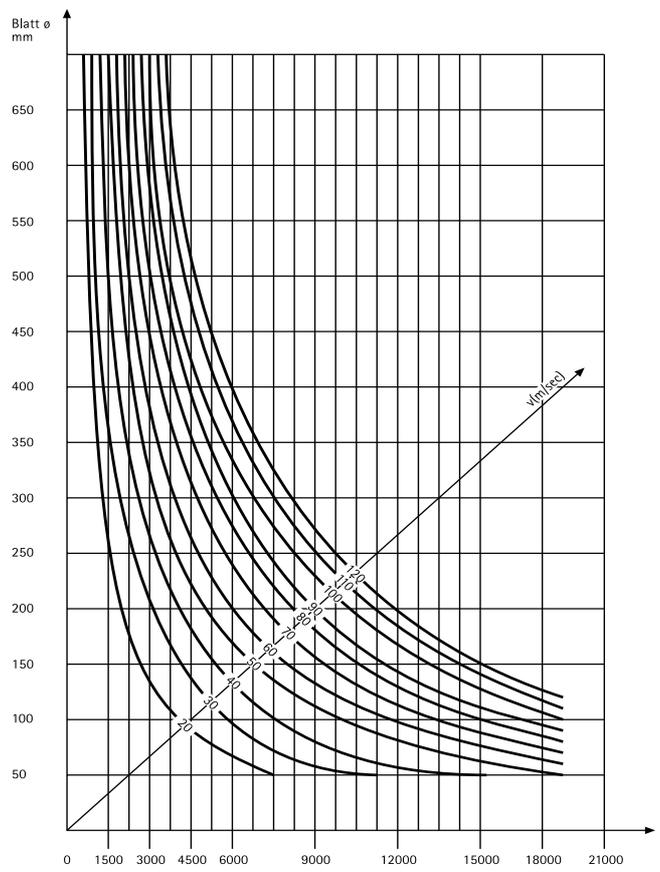
- The <  $f_z$  the > the cutting quality
- The > the shear angle of the cutting edge the > the cutting quality
- The better the chip transportation the > the cutting quality (spiral shank design, shear angle and chip directed design are better than straight shank/cutting edge)
- The < the cutting pressure the > the cutting quality (<  $f_z$ , shear angle, > hook angle and chip breaker result in < cutting pressure)
- Continuous cutting edges lead to a better cutting quality in homogeneous materials than interrupted cutting edges.

# 8 SAWS

- DUE TO NARROWER TOLERANCES, DP saw blades can be applied with higher feedrate  $f_z$  than HW saw blades.
- Increasing material thickness requires the reduction of the number of teeth.
- PIN HOLES and KEYWAY

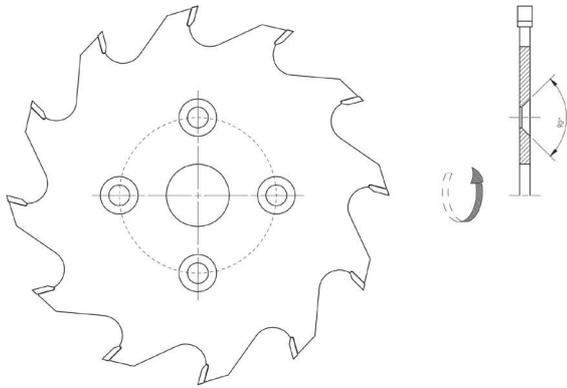


— Recommended cutting speed in m/sec

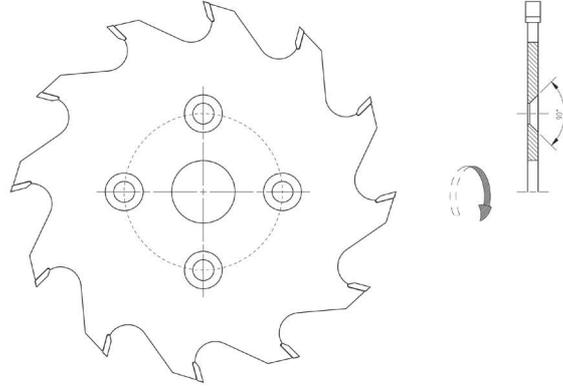


— COUNTERSINK FOR PINHOLES

Countersink from anticlockwise  
= Countersink right hand

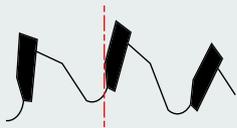


Countersink from counterclockwise  
= Countersink left hand



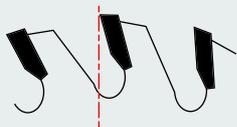
— HOOK ANGLE

**Negative hook angle**



Negative hook angle: generally for cross-cut saws, pendulum saws in wood, wood-based panels, NF metals and plastics as well as for materials prone to rebound with good workpiece clamping.

**Positive hook angle**



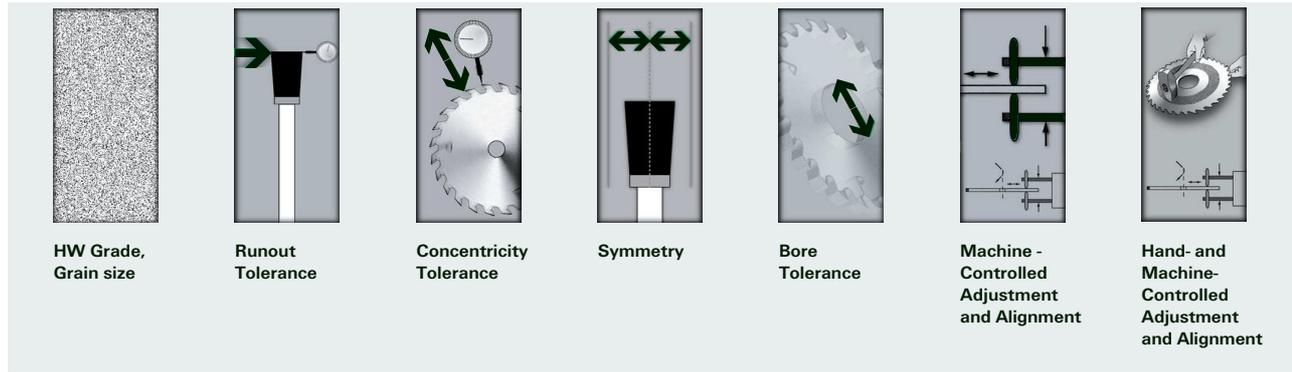
The softer the material, the larger the hook angle - typically 20° for cutting with the grain in soft wood, 15° for cutting with the grain in hard wood, 10° for wood-based panels and cross cuts in wood and 8° for NF metals and plastics.

— CUTTING MATERIAL:

The following cutting materials are used for Stehle HW saw blades:

- Cutting materials for wood-based panels, composite materials and universal application:  
TC03      TC20  
TC04 plus    TC25  
TC06  
TC10
- Cutting materials for solid wood:  
TCw15
- Cutting materials for metal working:  
TCx03  
TCm17

— QUALITY LEVEL OF SAW BLADES



<ul style="list-style-type: none"> <li>• <b>Quality level 1-0-1</b></li> </ul>	<p>The standard quality especially for portable saws</p>	<ul style="list-style-type: none"> <li>▶ Laser cut body</li> <li>▶ Optimal cutting material for the respective application</li> <li>▶ Precise production tolerances</li> <li>▶ Large tungsten carbide tips for maximum regrinds</li> <li>▶ Machine-controlled adjustment and alignment</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Quality level 2-0-6</b></li> </ul>	<p>The standard quality for table machines, clipping and miter saws with excellent price-performance-ratio</p>	<ul style="list-style-type: none"> <li>▶ Laser cut body</li> <li>▶ Application-specific tungsten carbide</li> <li>▶ Tight production tolerances</li> <li>▶ High concentric and runout precision</li> <li>▶ Application-specific noise reduced design</li> <li>▶ Machine-controlled adjustment and alignment</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Quality level 3-0-1</b></li> </ul>	<p>The highest quality level especially for industrial application on stationary machines.</p>	<ul style="list-style-type: none"> <li>▶ Laser cut body</li> <li>▶ Application-specific micrograin carbide</li> <li>▶ Extremely tight production tolerances</li> <li>▶ Highest concentric and runout precision</li> <li>▶ Noise reduced design</li> <li>▶ Hand- and machine-controlled adjustment and alignment</li> </ul>

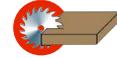
— MATERIAL SUITABILITY SAW BLADES

**MATERIAL**

**ABRASIV**

ABRASIV

Mineral wood-based panels (e.g. gypsum fibre boards and fiber cement boards)



Hard and abrasive plastics and composite materials

**BAU**

CONSTRUCTION

Construction woods

Formwork panels

Wood with nails

Cement soiled boards



**HOLZ**

WOOD

Longitudinal cut in hard and soft woods, wet and dry



Longitudinal cut in woods with long fibers



Cross cut in solid wood and wood-based panels

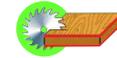
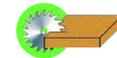
**PLATTE**

PANELS

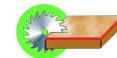
Raw particle boards

Solid wood, wood core plywood and plywood

Veneered and paper-laminated panels



Melamine laminated and foil coated panels



HPL / CPL laminated panels

Abrasive composite materials



Solid wood edges, plastic and veneer edges

**ALU**

ALU

Profiles, metal sheets and NF composite materials

Aluminum and NF metals



**STAHL**

STEEL

Dividing cuts in metal sheets, profiles, NF metals and cast iron

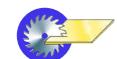


Stainless steel sheets, composite material with stainless steel coating / steel reinforcement

**PLAST**

PLAST

Dividing and miter cuts in profiles made from thermoset, thermoplastic (e.g. Acrylics, PMMA, PE, PP, ...)



Dividing and sizing cuts in boards made from hard and abrasive plastics and composite materials (e.g. Corian®, Trespa®, CFK, GFK, AFK, ...)



LEGEND: SQ ▲ suitable – SQ ▲▲▲ especially suitable | SW ▲ short edge life – SW ▲▲▲ long edge life | RSScoring saw blade

## TOOTH CONFIGURATIONS

F



F

F-FA



F-FA

F



F

WS



WS

WSA



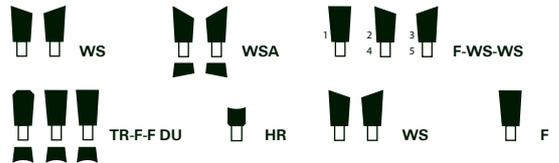
WSA



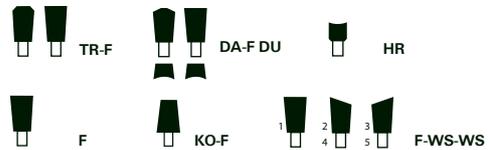
HR

HR

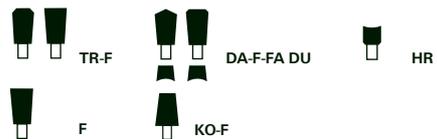
Main saw blades: **WS** [SQ ▲▲ | SW ▲▲ with RS], **WSA** [SQ ▲▲▲▲ | SW ▲▲▲▲]  
**F-WS-WS** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
**TR-F DU** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
**HR** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
 Scoring saw blades: **WS** [SQ ▲▲ | SW ▲▲ ]  
 Grooving saw blades: **F** [SQ ▲▲ | SW ▲▲▲▲]



Main saw blades: **TR-F** [SQ ▲▲ | SW ▲▲ with RS]  
**DA-F DU** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
**HR** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
 Scoring saw blades: **F** [SQ ▲▲ | SW ▲▲ ], **KO-F** [SQ ▲▲ | SW ▲▲▲▲]  
 Grooving saw blades: **F** [SQ ▲▲ | SW ▲▲ ]  
**F-WS-WS** [SQ ▲▲▲▲ | SW ▲▲▲▲]



Main saw blades: **TR-F** [SQ ▲▲ | SW ▲▲ with RS]  
**DA-F-FA DU** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
**HR** [SQ ▲▲▲▲ | SW ▲▲▲▲ with / without RS]  
 Scoring saw blades: **F** [SQ ▲▲ | SW ▲▲ ], **KO-F** [SQ ▲▲▲▲ | SW ▲▲▲▲]  
 Grooving saw blade: **F** [SQ ▲▲ | SW ▲▲ ]



Clipping saws: **WS** [SQ ▲▲ | SW ▲▲ ], **ES** [SQ ▲▲▲▲ | SW ▲▲▲▲]  
**DA-F** [SQ ▲▲▲▲ | SW ▲▲▲▲]



TR-F



TR-F



G7

TR-F



TR-F

F-WFA



F-WFA

WS-FA



WS-FA

TR-F-FA



TR-F-FA

## 9 CUTTERS WITH BORE

- It has to be distinguished between manual feed and mechanical feed. The regulations of the trade association BGHM have to be observed. The table head indicates if tools are designed for manual feed (man).
- Tools for manual feed (man) are normally turnover knife tools which allow a cutting speed  $V_c$  of max 80 m/s.
- **Cutting material:**  
Cutterheads can be equipped with different turnover knives and cutting edges and thus can be optimized for different applications. The indications in the catalogue refer to the cutting edges which are installed in and supplied with new tools. (For possible cutting materials see "Cutting edges / HW / DP / DM grades")

## 10 SHANK-TYPE TOOLS

### — General influences on $f_z$

- Stability (the more stable, the  $> f_z$ )

- ▶ The  $>$  the shank diameter, the  $> f_z$   
( $f_z$ -indications refer to  $d=20$  mm)
- ▶ The  $>$  the density of the tool body, the  $> f_z$   
( $f_z$ -indications refer to steel bodies; heavy metal and solid tungsten carbide bodies give  $> f_z$ )
- ▶ The heavier the machine bed the  $> f_z$

- ▶ Machine construction:  
portal is more stable than cantilever machine
- ▶ No. of the axes: 3 axis machine is more stable than a comparable 5 axis machine
- ▶ Tool interface: HSK is more stable than SK or BT
- ▶ Workpiece clamping: the higher the suction power / clamping power near the milling edge, the more stable the workpiece clamping is.

- Material thickness:  
The  $>$  the material, the  $>$  the hogging volume, the  $< f_z$   
( $f_z$ -indications refer to a material thickness of approx. 25 mm)
- Mode of application:  
The  $>$  the hogging volume, the  $< f_z$   
( $f_z$ -indication refer to grooving, for dividing  $< f_z$ ; for grooving  $> f_z$ )

- With shank-type cutters, the recommended cutting speed can normally not be reached due to the smaller tool diameters and the limited RPM. This is why usually the power spectrum of the CNC machine is not reached (normally 18,000 or 24,000 t/min).

## 11 DRILL BITS

- The range of RPM for drill bits depends on the tool diameter and lies between 2,500 and 9,000 1/min. The feed is derived from the RPM.
- Feed  $V_f$  for raw particle board

- Twist drill: 0.6 – 5.0 m/min
- Through hole bit HW: 0.6 – 3.1 m/min
- Through hole bit with VHW shank 1.0 – 3.8 m/min
- Through hole bit DP: 0.6 – 2.5 m/min

- Dowel bit: 1.25 – 5.0 m/min
- Dowel bit with VHW shank: 1.25 – 7.5 m/min
- Hardware hinge drill bit HW: 1.2 – 3.8 m/min
- Hardware hinge drill bit DP: 0.6 – 3.1 m/min

— Feed  $V_f$  for melamine laminated particle board

• Twist drill:	0.5 – 4.0 m/min	• Dowel bit:	1.0 – 4.0 m/min
• Through hole bit HW:	0.5 – 2.5 m/min	• Dowel bit with VHW shank:	1.0 – 6.0 m/min
• Through hole bit with VHW shank:	0.8 – 3.0 m/min	• Hardware hinge drill bit HW:	1.0 – 3.0 m/min
• Through hole bit DP:	0.5 – 2.0 m/min	• Hardware hinge drill bit DP:	0.5 – 2.5 m/min

— Feed  $V_f$  for veneered and paper-laminated particle board, MDF and solid wood

• Twist drill:	0.4 – 3.0 m/min	• Dowel bit:	0.8 – 3.2 m/min
• Through hole bit HW:	0.4 – 1.9 m/min	• Dowel bit with VHW shank:	0.8 – 4.5 m/min
• Through hole bit with VHW shank:	0.6 – 2.3 m/min	• Hardware hinge drill bit HW:	0.8 – 2.3 m/min
• Through hole bit DP:	0.4 – 1.5 m/min	• Hardware hinge drill bit DP:	0.4 – 1.9 m/min

Connection dimensions for Boring Bit Collet Chucks

Threaded shank design for Kombi and Klack systems with appropriate machines

Type	Machine assignment
A	Nottmeyer, Lehbrink, Pankoke + Kochsiek, Prieß + Horstmann
B	Ayen, Holzma, Knoevenagel, Mayer, Brandt, Reichenbacher, Torwegge, Zubiola
C	Nottmeyer
D	Böttchner + Gessner, Biesse, Busellato, Dingenotto, Hüllhorst, Holz-Her, Homag, Koch, Morbidelli, Reimall, Torwegge, Weeke, Reich
E	Bilek Type KÜN, Knoevenagel
F	Alberti, Balestrini, Bilek (05 R), Busellato, Dubus, Goma, Grotefeld, Omeg, Reimall, Schleicher, SCM, Tanzani, Viciani, Vitap, Weingärtner
G	Scheer

## 12 CUTTING EDGES / HW / DP / DM GRADES:

- Small wedge angles and large hook angles mean sharp cutting edges, but also quick wear.
- The harder the cutting material, the larger the wedge angle must be (to avoid tooth breakage) and this means a blunt hook angle. Thus, edge life is increased at the expense of sharpness.
- Workpiece materials requiring sharp cutting edges (such as solid wood, plywood, ...) can be machined with DP tools only if these have very large shear angles.
- **CUTTING MATERIAL:**  
The following cutting materials are used for Stehle turnover knives and exchangeable knives:

- Cutting materials for wood-based panels and universal application:

- ▶ TC02
- ▶ TC03
- ▶ TC05
- ▶ TC06

- Cutting material for solid wood:

- ▶ TCw15
- ▶ TCw25
- ▶ TCw30
- ▶ TCw40

# sales regulations

## — REWORK AND ALTERATIONS

- Rework and alterations on new tools are only made in compliance with legal and safety regulations.
- Thus, the delivery of stock tools can be prolonged by a few days. Please check this in advance with the Stehle inside sales department.
- Special bores which deviate from normal bores of the stock tool are offered and charged according to the valid rework price list. In the case of diamond tools please keep in mind that due to the tight tolerances the cutting edge has to be reworked and thus resharpening possibilities are reduced by one cycle

## — ORDER INFORMATION

- This catalogue and the related price list replace all previous editions and prices granted.
- Indications as to delivery times as made by the delivery signs in the catalogue are subject to change during the period of validity of the catalogue. Current details can be obtained from the Stehle inside sales staff.

## — QUANTITIES

- The general sales and packing unit is one piece.
- In the case of small parts (TOK, knives, screws etc.) a packing unit can consist of several pieces. In such cases, delivered quantities have to correspond with the packing units.
- If sets consisting of different tools are offered, they can be purchased only as a complete set.
- If large quantities are ordered special prices can be granted. Please ask the Stehle inside sales staff.

## — TERMS OF DELIVERY

- For deliveries abroad generally conditions ex factory apply.
- Additional costs for express shipping such as express, airfreight etc. will be invoiced at our cost price.

## — ORDER PROCESSING

- For queries please keep ready the number of our order confirmation, our date and your order data. This speeds up handling time.
- Cancellations are subject to our written approval and confirmation. Costs incurred until then (e.g. for special production and rework) have to be born by the customer.
- **Return of goods:**  
Stock items can only be returned after prior agreement with the Stehle staff in charge within the warranty period in original condition. In this case, a handling fee will be charged. Damaged packages must be compensated. Special tools and reworked stock tools are excluded from return.

## — ORDER PROCESSING VIA NEXMART

- NexMart registered customers can place their order via nexMart portal. They can use the online-catalogue offering product search, inquiry, order history as well as feed-back.
- The Nexmart portal is available for customers in Germany and in Austria at the date of the catalogue printing.

## — GENERAL TERMS AND CONDITIONSs

- Please pay attention to the complete Stehle General Terms and Condition on the website [www.stehle-int.com](http://www.stehle-int.com)

# Diameter Index Circular Saw Blades

Ø D [mm]	Ø d [mm]	Z	Tooth geometry	Order-No.	Program	Page
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100	32	30	ES	58808829	HW KKE	1-62
100	32	30	ES	58808830	HW KKE	1-62
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100	32	30	ES	58808842	HW KKE	1-62
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110	32	20	WS	58808806	HW KKO	1-60
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110	40	20	WS	58808838	HW KKM	1-61
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120	20	24	WS	50104061	HW HKS - Massiv	1-5
120	20	24	WS	58459419	DP RSK - nn-System	1-37
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120	50	12+12	ES	58459461	DP Scoring Saw Blade DP "ES" - adjustable, nn-System DP flex	1-38
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125	20	24	WS	58459436	DP RSK - nn-System	1-37
125	20	24	KO-F	58807953	HW RSK - nn-System	1-28
125	20	2x12	F	58110206	HW RSK2	1-30
125	20	36	WS	50110012	HW HKS - Board	1-7
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125	22	2x12	F	58110204	HW RSK2	1-30
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125	32	24	WS	58808835	HW Clipping Saw Blades HW for edge trimming "WS"	1-60
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140	30	36	WS	58808822	HW KKM	1-61
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150	20	12	WS	50110243	HW HKS - Massiv	1-5
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190	20	38	TR-F	58116509	HW Unisteel (HKS)	1-12	216	30	48	WS	58110181	HW K + G - negative	1-15, 1-16
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250	30	80	WS	58100038	HW ZWS	1-22	300	30	96	TR-F	58808213	HW NF - negative	1-51
250	30	80	TR-F	58100386	HW TRF	1-25	300	30	96	TR-F	58808214	HW NF - negative	1-51
250	30	80	TR-F	58808102	HW NF - positive	1-50	300	30	96	TR-F	58808621	HW KKS - hard plastic	1-58
250	30	80	TR-F	58808200	HW NF - negative	1-51	300	30	98	G7	58192568	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
250	30	80	TR-F	58808203	HW NF - negative	1-15, 1-51	300	30	98	G7	58192663	HW NF-Chop Saw Blades HW - profiles "G7"	1-52
250	30	80	TR-F	58808620	HW KKS - hard plastic	1-58	300	32	96	TR-F	58808125	HW NF - positive	1-50
250	30	80	F-WS-WS	58808706	HW Matador 5	1-24	300	32	96	TR-F	58808215	HW NF - negative	1-51
							300	40	72	WS	58100237	HW K + G - negative	1-16
							300	40	96	TR-F	58808216	HW NF - negative	1-51
							300	70	22	F	50100525	HW LWR	1-49
							303	30	100	F-WS-WS	58808707	HW Matador 5	1-24
							303	30	60	HR	58459439	DP HRP - nn-System DP flex	1-36
							303	30	60	DA-F DU	58804279	HW KDF - Industry - negative	1-32

# Diameter Index Circular Saw Blades

Ø D [mm]	Ø d [mm]	Z	Tooth geometry	Order-No.	Program	Page	Ø D [mm]	Ø d [mm]	Z	Tooth geometry	Order-No.	Program	Page
303	30	60	TR-F DU	58804282	HW KDF - Industry Professionell	1-35	350	30	98	G7	58192274	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
303	30	60	DA-F FA DU	58804301	HW KDF - Industry Plus	1-34	350	30	98	G7	58192662	HW NF-Chop Saw Blades HW - profiles "G7"	1-52
303	30	60	DA-F DU	58804353	HW KDF - Industry	1-33	350	32	108	TR-F	58808226	HW NF - negative	1-51
305	30	8	F-FA	58458795	DP HKS - L2	1-10	350	40	108	TR-F	58808227	HW NF - negative	1-51
305	25,4	60	F-WFA	50805872	HT Mega-Steel	1-56	350	40	72	WS	58110273	HW K + G - negative	1-16
305	25,4	60	F-WFA	58805862	HW Steel	1-55	350	40	84	G7	58192273	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
305	25,4	80	F-WFA	50805873	HT Mega-Steel	1-56	350	60	72	TR-F	58807955	HW TFP	1-43
305	25,4	80	F-WFA	58805863	HW Steel	1-55	350	70	20	F	50100528	HW LWR	1-49
305	30	32	WS	58110270	HW K + G - negative	1-16	350	70	28	F	50457843	HW LWR	1-49
305	30	48	WS	58120065	HW ZWS	1-22	355	25,4	80	F-WFA	50805876	HT Mega-Steel	1-56
305	30	60	WS	58110281	HW K + G - negative	1-16	355	25,4	80	F-WFA	58805866	HW Steel	1-55
305	30	60	WS	58120066	HW ZWS	1-22	355	25,4	90	F-WFA	50805878	HT Mega-Steel	1-56
305	30	60	F-WFA	58165002	HW Unisteel	1-54	355	25,4	90	F-WFA	58805868	HW Steel	1-55
305	30	60	TR-F	58808241	HW NF - negative	1-51	355	30	80	F-WFA	58165003	HW Unisteel	1-54
305	30	80	F-WFA	50805874	HT Mega-Steel	1-56	355	30	90	F-WFA	50805877	HT Mega-Steel	1-56
305	30	80	F-WFA	58805864	HW Steel	1-55	355	30	90	F-WFA	58805867	HW Steel	1-55
305	30	96	WS	58110272	HW K + G - negative	1-16	355	30	96	WS	58110143	HW K + G - negative	1-16
305	30	96	TR-F	58808245	HW NF - negative	1-51	355	75	72	TR-F	58807888	HW TFP	1-43
305	30	96	TR-TR	58808614	HW KKS - hard plastic negative	1-59	380	32	110	TR-F	58808243	HW NF - negative	1-51
315	30	10	F-FA	58458801	DP HKS - L2	1-10	380	32	112	G7	58192567	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
315	30	14	F	58104055	HW ZFL	1-18	380	60	72	TR-F FA	50750130	DP TFP	1-44
315	30	20	F-FA	58120046	HW BKS (nail proof)	1-17	380	60	72	TR-F FA	50750131	DP TFP	1-44
315	30	28	WS	58102003	HW ZW	1-20	380	60	72	TR-F	58806065	HW TFP	1-43
315	30	28	WS	58120062	HW ZQW	1-21	400	30	15	F-FA	58458798	DP HKS - L2	1-10
315	30	36	WS	58100255	HW ZQW	1-21	400	30	18	F	58104021	HW ZFL	1-18
315	30	48	WS	58100252	HW ZWS	1-22	400	30	28	WS	50804423	HW Planet	1-48
315	30	60	WS	58100253	HW ZWS	1-22	400	30	28	WS	58100005	HW ZQW	1-21
315	30	84	WS	58110274	HW K + G - negative	1-16	400	30	28	WS	58100183	HW ZFZ	1-19
315	30	96	TR-F	58803823	HW TRF - 1	1-26	400	30	28	F-FA	58120043	HW BKS (nail proof)	1-17
320	25,4	84	F-WFA	58805859	HW Steel	1-55	400	30	32	WS	58120008	HW ZQW	1-21
320	65	60	TR-F FA	50750120	DP TFP	1-44	400	30	36	WS	58100012	HW ZQW	1-21
330	30	24	WS	58120018	HW ZQW	1-21	400	30	36	WS	58101005	HW ZW	1-20
330	30	54	F-WFA	58165005	HW Unisteel	1-54	400	30	48	WS	58120017	HW ZQW	1-21
330	30	90	F-WFA	50805875	HT Mega-Steel	1-56	400	30	60	WS	58100022	HW ZWS	1-22
330	30	90	F-WFA	58805865	HW Steel	1-55	400	30	72	TR-F FA	50750132	DP TFP	1-44
330	30	96	TR-F	58808217	HW NF - negative	1-51	400	30	72	TR-F	58806069	HW TFP	1-43
330	32	96	TR-F	58808218	HW NF - negative	1-51	400	30	84	WS	58100029	HW ZWS	1-22
335	30	36	WS	58120063	HW ZQW	1-21	400	30	84	F-WFA	58165004	HW Unisteel	1-54
350	30	100	WS-FA	50808502	HW KKS - plastic	1-57	400	30	96	WS	58100034	HW ZWS	1-22
350	30	100	F-WS-WS	58808709	HW Matador 5	1-24	400	30	96	TR-F	58808113	HW NF - positive	1-50
350	30	108	WS	58100040	HW ZWS	1-22	400	30	96	TR-F	58808232	HW NF - negative	1-51
350	30	108	TR-F	58100389	HW TRF	1-25	400	30	98	G7	58192276	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
350	30	108	TR-F	58807831	HW TRF - 1	1-26	400	30	98	G7	58192659	HW NF-Chop Saw Blades HW - profiles "G7"	1-52
350	30	108	TR-F	58808111	HW NF - positive	1-50	400	30	108	TR-F	58808623	HW KKS - hard plastic	1-58
350	30	108	TR-F	58808225	HW NF - negative	1-51	400	30	120	WS	58100041	HW ZWS	1-22
350	30	108	TR-F	58808622	HW KKS - hard plastic	1-58	400	75	72	TR-F FA	50750133	DP TFP	1-44
350	30	112	G7	58192275	HW NF-Chop Saw Blades HW - profiles "G7"	1-53	400	75	72	TR-F	58806071	HW TFP	1-43
350	30	12	F-FA	58458802	DP HKS - L2	1-10	400	80	72	TR-F FA	50750134	DP TFP	1-44
350	30	16	F	58104015	HW ZFL	1-18	400	80	72	TR-F	58807809	HW TFP	1-43
350	30	24	WS	50804422	HW Planet	1-48	410	30	28	WS	58120019	HW ZQW	1-21
350	30	24	F	58104041	HW ZFL	1-18	420	30	96	TR-F	58808115	HW NF - positive	1-50
350	30	24	WS	58120005	HW ZQW	1-21	420	30	96	TR-F	58808234	HW NF - negative	1-51
350	30	24	F-FA	58120042	HW BKS (nail proof)	1-17	420	30	98	G7	58192277	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
350	30	32	WS	58100011	HW ZQW	1-21	420	30	98	G7	58192660	HW NF-Chop Saw Blades HW - profiles "G7"	1-52
350	30	32	WS	58101004	HW ZW	1-20	420	40	100	TR-F	58808236	HW NF - negative	1-51
350	30	36	WS	58120014	HW ZQW	1-21	420	40	54	WS	58110145	HW K + G - negative	1-16
350	30	42	WS	58120015	HW ZQW	1-21	420	40	84	WS	58110144	HW K + G - negative	1-16
350	30	54	WS	58100021	HW ZWS	1-22	420	60	60	TR-F FA	50750135	DP TFP	1-44
350	30	54	WS	58100704	HW ZWS	1-23	420	60	72	TR-F	58807956	HW TFP	1-43
350	30	72	TR-F FA	50750128	DP TFP	1-44	430	80	72	TR-F	58806479	HW TFP	1-43
350	30	72	TR-F FA	50750129	DP TFP	1-44	450	30	20	WS	58101020	HW ZW	1-20
350	30	72	WS	58100028	HW ZWS	1-22	450	30	30	F-FA	58120044	HW BKS (nail proof)	1-17
350	30	72	TR-F	58100300	HW TRF	1-25	450	30	32	F	58104051	HW ZFL	1-18
350	30	72	HR	58459446	DP HRP - nn-System DP flex	1-36	450	30	36	WS	50804425	HW Planet	1-48
350	30	72	DA-F DU	58804280	HW KDF - Industry	1-33	450	30	40	WS	58100013	HW ZQW	1-21
350	30	72	TR-F	58807803	HW TFP	1-43	450	30	40	WS	58101006	HW ZW	1-20
350	30	72	TR-F	58807830	HW TRF - 1	1-26, 1-27	450	30	66	WS	58100023	HW ZWS	1-23
350	30	84	WS	58100033	HW ZWS	1-22							
350	30	90	TR-F	58808222	HW NF - negative	1-51							

# Diameter Index Circular Saw Blades

Ø D [mm]	Ø d [mm]	Z	Tooth geometry	Order-No.	Program	Page
450	30	72	TR-F-FA	50750138	DP TFP	1-44
450	30	72	TR-F	58458789	HW TFP	1-43
450	30	90	F-WFA	58165006	HW Unisteel	1-54
450	30	96	TR-F	58808235	HW NF - negative	1-51
450	30	108	WS	58100060	HW ZWS	1-23
450	30	112	G7	58192278	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
450	40	108	TR-F	58808117	HW NF - positive	1-50
450	60	72	TR-F-FA	50750136	DP TFP	1-44
450	60	72	TR-F	58807817	HW TFP	1-43
450	80	72	TR-F-FA	50750137	DP TFP	1-44
460	30	72	TR-F-FA	50750146	DP TFP	1-44
480	30	72	TR-F-FA	50750139	DP TFP	1-44
480	60	72	TR-F-FA	50750140	DP TFP	1-44
500	30	34	F-FA	58120045	HW BKS (nail proof)	1-17
500	30	36	F	58104052	HW ZFL	1-18
500	30	44	WS	58100014	HW ZQW	1-21
500	30	44	WS	58102007	HW ZW	1-20
500	30	72	WS	58100024	HW ZWS	1-23
500	30	120	TR-F	58808118	HW NF - positive	1-50
500	30	120	TR-F	58808239	HW NF - negative	1-51
500	30	126	G7	58192279	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
500	30	126	G7	58192661	HW NF-Chop Saw Blades HW - profiles "G7"	1-52
500	30	144	WS	50807842	HW OKW	1-48
500	30	145	F-WS-WS	58808710	HW Matador 5	1-24
550	30	32	F	58104054	HW ZFL	1-18
550	30	64	WS	58120070	HW ZWS	1-23
550	30	133	G7	58192392	HW NF-Chop Saw Blades HW - profiles "G7"	1-53
550	30	160	F-WS-WS	58808711	HW Matador 5	1-24
600	30	36	F-FA	58120227	HW BKS (nail proof)	1-17
600	30	40	F	58104048	HW ZFL	1-18
600	30	54	WS	58101018	HW ZW	1-20
700	30	42	F	58104053	HW ZFL	1-18
700	30	42	F-FA	58120228	HW BKS (nail proof)	1-17
700	30	46	F	58104049	HW ZFL	1-18
700	30	60	WS	58101019	HW ZW	1-20

# Diameter Index Cutters with Bore

Ø D [mm]	Ø d [mm]	B [mm]	Z	Order-No.	Program	Page	Ø D [mm]	Ø d [mm]	B [mm]	Z	Order-No.	Program	Page
57	16		2	50811739	DP 3565-1 Edge Rounding Cutters	2-18	100	30	64	3+3	50186074	3588-2 Jointing Cutterheads airFace	2-16
57	16		2	50811740	DP 3565-1 Edge Rounding Cutters	2-18	100	30	64,5	2+2	58186387	DP 3585 Jointing Cutters DP airFace	2-13
58.7	16		3	50182686	DP 3565-2 Edge Rounding Cutters CM	2-19	100	30	64,5	2+2	58186388	DP 3585 Jointing Cutters DP airFace	2-13
58.7	16		3	50811743	DP 3565-2 Edge Rounding Cutters CM	2-19	100	30	64,5	3+3	58186371	DP 3585 Jointing Cutters DP airFace	2-13
60	25	64,5	2+2	58186381	DP 3585 Jointing Cutters DP airFace	2-13	100	30	64,5	3+3	58186372	DP 3585 Jointing Cutters DP airFace	2-13
60	25	64,5	2+2	58186382	DP 3585 Jointing Cutters DP airFace	2-13	100.4	22	7,0	3	50660347	DP 3014L Grooving Cutters DP - for Lamello Clamex P®	2-2
69	16		4	50811737	DP 3565 Edge Rounding Cutters	2-18	100.4	30	7,0	3	50660346	DP 3014L Grooving Cutters DP - for Lamello Clamex P®	2-2
69	16		4	50811738	DP 3565 Edge Rounding Cutters	2-18	102	22	3,85	12	50660301	HW 1103L Grooving Cutters - for Lamello®	2-1
70	25	43	2+2	50186037	3588-2 Jointing Cutterheads airFace	2-15	102	35	50	2	50389261	HS 464 Multi Dowel Cutterheads	2-37
70	25	43	2+2	50186038	3588-2 Jointing Cutterheads airFace	2-15	102	35	50	4	50389269	HS 464 Multi Dowel Cutterheads	2-37
70	30	48	2+2	50811780	DP 3585-2 Jointing Cutters DP - HOLZ-HER - AirStream-System	2-14	102	35	75	2	50389262	HS 464 Multi Dowel Cutterheads	2-37
70	30	48	2+2	50811781	DP 3585-2 Jointing Cutters DP - HOLZ-HER - AirStream-System	2-14	102	35	75	4	50389270	HS 464 Multi Dowel Cutterheads	2-37
70	30	64	2+2	50811782	DP 3585-2 Jointing Cutters DP - HOLZ-HER - AirStream-System	2-14	102	35	100	2	50389263	HS 464 Multi Dowel Cutterheads	2-37
70	30	64	2+2	50811783	DP 3585-2 Jointing Cutters DP - HOLZ-HER - AirStream-System	2-14	102	35	100	4	50389271	HS 464 Multi Dowel Cutterheads	2-37
80	30	100	2+2+v2	58665106	HW 5570 Spiral Cutterheads	3-28	102	40	50	2	50389264	HS 464 Multi Dowel Cutterheads	2-37
80	30	43	2+2	50186031	3588-2 Jointing Cutterheads airFace	2-15	102	40	50	4	50389272	HS 464 Multi Dowel Cutterheads	2-37
80	30	80	2+2+v2	58665105	HW 5570 Spiral Cutterheads	3-28	102	40	75	2	50389265	HS 464 Multi Dowel Cutterheads	2-37
85	30	43,2	3+3	58186408	DP 3585 Jointing Cutters DP airFace	2-13	102	40	75	4	50389273	HS 464 Multi Dowel Cutterheads	2-37
85	30	43,2	3+3	58186409	DP 3585 Jointing Cutters DP airFace	2-13	102	40	100	2	50389266	HS 464 Multi Dowel Cutterheads	2-37
85	30	48	3+3	50186057	3588-2 Jointing Cutterheads airFace	2-15	102	40	100	4	50389274	HS 464 Multi Dowel Cutterheads	2-37
85	30	48	3+3	50186058	3588-2 Jointing Cutterheads airFace	2-15	102	40	125	2	50389267	HS 464 Multi Dowel Cutterheads	2-37
96	30	40	2	69563162	1547 Universal Cutterheads Euro - Silverline	2-22	102	40	125	4	50389275	HS 464 Multi Dowel Cutterheads	2-37
100	22	3,95	4	50660302	DP 3013L Grooving Cutters - for Lamello®	2-1	102	40	150	2	50389268	HS 464 Multi Dowel Cutterheads	2-37
100	22	3,97	12	50110178	HW 1103L Grooving Cutters - for Lamello®	2-1	102	40	150	4	50389276	HS 464 Multi Dowel Cutterheads	2-37
100	22	3,97	4 V4	69470022	HW 1568 Grooving Cutterheads - for Lamello®	2-2	116	30	40/50	2	69563160	1547 Universal Cutterheads Euro - Silverline	2-22
100	22	4,0	6	50660300	HW 1103L Grooving Cutters - for Lamello®	2-1	116	50	40/50	2	69563161	1547 Universal Cutterheads Euro - Silverline	2-22
100	22	7,0	6	50660303	HW NKP - Grooving Saw Blades prism	2-5	120	20	4,0	35	50806254	HW RNK-Matador 5	2-6
100	22	8,0	4	50621077	HW 1103G Cutter for removing resin pockets	2-3	120	20	4,0	35	50806258	HW RNK-Matador 5	2-6
100	25	43	2+2	50186071	3588-2 Jointing Cutterheads airFace	2-16	120	20	5,0	35	50806255	HW RNK-Matador 5	2-6
100	25	43	2+2	50186072	3588-2 Jointing Cutterheads airFace	2-16	120	20	5,0	35	50806259	HW RNK-Matador 5	2-6
100	30	43	3+3	50186063	3588-2 Jointing Cutterheads airFace	2-16	120	35	4,0	35	50806256	HW RNK-Matador 5	2-6
100	30	43	3+3	50186064	3588-2 Jointing Cutterheads airFace	2-16	120	35	5,0	35	50806257	HW RNK-Matador 5	2-6
100	30	43	3+3	50186065	3588-2 Jointing Cutterheads airFace	2-16	122	40	40	4	50822780	525 Profile Cutterheads	2-32
100	30	43	3+3	50186066	3588-2 Jointing Cutterheads airFace	2-16	122	40	60	4	50822781	525 Profile Cutterheads	2-32
100	30	43,2	2+2	58186377	DP 3585 Jointing Cutters DP airFace	2-13	122	40	80	4	50822782	525 Profile Cutterheads	2-32
100	30	43,2	2+2	58186378	DP 3585 Jointing Cutters DP airFace	2-13	122	40	100	4	50822783	525 Profile Cutterheads	2-32
100	30	43,2	2+2	58186385	DP 3585 Jointing Cutters DP airFace	2-13	122	40	130	4	50822784	525 Profile Cutterheads	2-32
100	30	43,2	2+2	58186386	DP 3585 Jointing Cutters LowNoise	2-13	122	40	150	4	50822785	525 Profile Cutterheads	2-32
100	30	43,2	3+3	58186373	DP 3585 Jointing Cutters DP airFace	2-13	122	40	180	4	50822786	525 Profile Cutterheads	2-32
100	30	43,2	3+3	58186374	DP 3585 Jointing Cutters DP airFace	2-13	122	40	230	4	50822787	525 Profile Cutterheads	2-32
100	30	43,2	3+3	58186414	DP 3585 Jointing Cutters DP airFace	2-13	125	30	1,5	12	50188359	HW Grooving Cutters HW	2-4
100	30	43,2	3+3	58186415	DP 3585 Jointing Cutters DP airFace	2-13	125	30	1,8	12	50188360	HW Grooving Cutters HW	2-4
100	30	63	3+3	50811784	DP 3585-2 Jointing Cutters DP - HOLZ-HER - AirStream-System	2-14	125	30	2,0	12	50188361	HW Grooving Cutters HW	2-4
100	30	63	3+3	50811785	DP 3585-2 Jointing Cutters DP - HOLZ-HER - AirStream-System	2-14	125	30	2,2	12	50188362	HW Grooving Cutters HW	2-4
100	30	64	3+3	50186061	3588-2 Jointing Cutterheads airFace	2-16	125	30	2,5	12	50188363	HW Grooving Cutters HW	2-4
100	30	64	3+3	50186062	3588-2 Jointing Cutterheads airFace	2-16	125	30	3,0	12	50188364	HW Grooving Cutters HW	2-4
100	30	64	3+3	50186073	3588-2 Jointing Cutterheads airFace	2-16	125	30	3,5	12	50188365	HW Grooving Cutters HW	2-4
							125	30	4,0	12	50188366	HW Grooving Cutters HW	2-4
							125	30	4,0	4 V4	50660318	HW 1503 Grooving Cutterheads	2-8
							125	30	4,5	12	50188367	HW Grooving Cutters HW	2-4
							125	30	5,0	12	50188368	HW Grooving Cutters HW	2-4
							125	30	5,0	4 V4	50660319	HW 1503 Grooving Cutterheads	2-8
							125	30	6,0	12	50188369	HW Grooving Cutters HW	2-4
							125	30	7,0	12	50188370	HW Grooving Cutters HW	2-4
							125	30	8,0	12	50188371	HW Grooving Cutters HW	2-4
							125	30	10	12	50188372	HW Grooving Cutters HW	2-4
							125	30	25	2+2	50811729	DP 3584 Jointing / Rabbeting Cutters	2-12
							125	30	29	3+3	58186401	DP 3585 Jointing Cutters DP airFace	2-13
							125	30	30	4 V4	68010013	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11
							125	30	32,5	3+3	58186306	3588-2 Jointing Cutterheads airFace	2-16
							125	30	32,5	3+3	58186307	3588-2 Jointing Cutterheads airFace	2-16
							125	30	43	2+2	50811300	DP 3584 Jointing / Rabbeting Cutters	2-12
							125	30	43	3+3	50186047	3588-2 Jointing Cutterheads airFace	2-16
							125	30	43,2	3+3	50185970	3588-2 Jointing Cutterheads airFace	2-16

# Diameter Index Cutters with Bore

Ø D [mm]	Ø d [mm]	B [mm]	Z	Order-No.	Program	Page	Ø D [mm]	Ø d [mm]	B [mm]	Z	Order-No.	Program	Page
125	30	43,2	3+3	50185971	3588-2 Jointing Cutterheads airFace	2-16	140	30	50	4 V4	68010043	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11
125	30	43,2	3+3	50186051	3588-2 Jointing Cutterheads airFace	2-16	140	40	13-33	2	68303401	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	43,2	3+3	50186052	DIAMAX SmartJointer Jointing Cutterhead DP	2-16	140	40	13-33	2	68303402	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	43,2	3+3	58186399	DP 3585 Jointing Cutters DP airFace	2-13	140	40	13-36	2	68303404	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	50	2+2 V2+2	58665107	Jointing and Rabbeting Cutterheads HW	3-29	140	40	13-36	2	68303405	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	50	2+2 V2+2	58665108	5576 Jointing and Rabbeting Cutterheads HW	3-29	140	40	13-36	2	68303406	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	50	4 V4	68010023	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11	140	40	13-36	2	68303407	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	63	3+3	50186055	3588-2 Jointing cutterheads airFace DP	2-16	140	40	13-36	2	68303408	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	63	3+3	50186056	3588-2 Jointing Cutterheads airFace	2-16	140	40	13-40	2	68303403	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	64	3+3	50186048	3588-2 Jointing Cutterheads airFace	2-16	140	40	50	4 V4	68010044	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11
125	30	64	3+3	58186400	DP 3585 Jointing Cutters DP airFace	2-13	140	50	13-33	2	68303501	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	64,4	3+3	50185972	3588-2 Jointing Cutterheads airFace	2-16	140	50	13-33	2	68303502	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	64,4	3+3	50185973	3588-2 Jointing Cutterheads airFace	2-16	140	50	13-36	2	68303504	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	64,4	3+3	50186049	DIAMAX SmartJointer Jointing Cutterhead DP	2-16	140	50	13-36	2	68303505	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	30	64,4	3+3	50186050	3588-2 Jointing Cutterheads airFace	2-16	140	50	13-36	2	68303506	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	40	100	2+2	50665050	HW 5570 Spiral Cutterheads	2-27	140	50	13-36	2	68303507	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	40	100	4	50561038	HS 556-1 Planing Cutterheads	2-28	140	50	13-36	2	68303508	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	40	130	2+2	50665101	HW 5570 Spiral Cutterheads	2-27	140	50	13-40	2	68303503	HW 4010 Tongue and Groove Tool Set - Silverline	2-42
125	40	130	4	50561035	HS 556-1 Planing Cutterheads	2-28	140	50	50	4 V4	68010045	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11
125	40	150	4	50561036	HS 556-1 Planing Cutterheads	2-28	143	40	60	4	58562686	HS 520-1 Hydro Planing Cutterheads	2-29
125	40	170	2+2	50665102	HW 5570 Spiral Cutterheads	2-27	143	40	130	4	58562689	HS 520-1 Hydro Planing Cutterheads	2-29
125	40	180	4	50561037	HS 556-1 Planing Cutterheads	2-28	143	40	230	4	58562990	HS 520-1 Hydro Planing Cutterheads	2-29
125	40	230	2+2	50665103	HW 5570 Spiral Cutterheads	2-27	150	30	1,5	12	50188373	HW Grooving Cutters HW	2-4
125	40	240	2+2	50665104	HW 5570 Spiral Cutterheads	2-27	150	30	2,0	12	50188375	HW Grooving Cutters HW	2-4
125	40	240	4	50561054	HS 556-1 Planing Cutterheads	2-28	150	30	2,2	12	50188376	HW Grooving Cutters HW	2-4
125	40	30	4 V4	68010014	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11	150	30	2,5	12	50188377	HW Grooving Cutters HW	2-4
125	40	50	4 V4	68010024	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11	150	30	3,0	12	50188378	HW Grooving Cutters HW	2-4
125	40	80	4	50561046	HS 556-1 Planing Cutterheads	2-28	150	30	3,5	12	50188379	HW Grooving Cutters HW	2-4
125	50	30	4 V4	68010015	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11	150	30	4,0	12	50188380	HW Grooving Cutters HW	2-4
125	50	50	4 V4	68010025	HW 1586 Jointing and Rabbeting Cutterheads - Silverline	2-11	150	30	4,5	12	50188381	HW Grooving Cutters HW	2-4
130	30	40	2	50664637	HW 5567 Counter Profile Cutterheads	2-23	150	30	5,0	12	50188382	HW Grooving Cutters HW	2-4
135	30	40	2	50663047	HW 1534-2 Glue Joint Profile Cutterheads	2-26	150	30	6,0	12	50188383	HW Grooving Cutters HW	2-4
135	30	50	2	50663025	HW 1534-2 Glue Joint Profile Cutterheads	2-26	150	30	7,0	12	50188384	HW Grooving Cutters HW	2-4
135	30	60	2	50663026	HW 1534-2 Glue Joint Profile Cutterheads	2-26	150	30	8,0	12	50188385	HW Grooving Cutters HW	2-4
137	40	100	4	58562921	521-1 Hydro Profile Cutterheads	2-34	150	30	9,0	12	50188386	HW Grooving Cutters HW	2-4
137	40	130	4	58562922	521-1 Hydro Profile Cutterheads	2-34	150	30	10	12	50188387	HW Grooving Cutters HW	2-4
137	40	150	4	58562923	521-1 Hydro Profile Cutterheads	2-34	150	50	100	4	58562927	521-1 Hydro Profile Cutterheads	2-34
137	40	180	4	58562924	521-1 Hydro Profile Cutterheads	2-34	150	50	100	6	58562935	521-1 Hydro Profile Cutterheads	2-34
137	40	230	4	58562925	521-1 Hydro Profile Cutterheads	2-34	150	50	130	4	58562928	521-1 Hydro Profile Cutterheads	2-34
137	40	60	4	58562920	521-1 Hydro Profile Cutterheads	2-34	150	50	130	6	58562936	521-1 Hydro Profile Cutterheads	2-34
137	50	100	4	50822792	525 Profile Cutterheads	2-32	150	50	150	4	58562929	521-1 Hydro Profile Cutterheads	2-34
137	50	130	4	50822793	525 Profile Cutterheads	2-32	150	50	150	6	58562937	521-1 Hydro Profile Cutterheads	2-34
137	50	150	4	50822794	525 Profile Cutterheads	2-32	150	50	180	4	58562930	521-1 Hydro Profile Cutterheads	2-34
137	50	180	4	50822795	525 Profile Cutterheads	2-32	150	50	180	6	58562938	521-1 Hydro Profile Cutterheads	2-34
137	50	230	4	50822798	525 Profile Cutterheads	2-32	150	50	230	4	58562931	521-1 Hydro Profile Cutterheads	2-34
137	50	60	4	50822790	525 Profile Cutterheads	2-32	150	50	230	6	58562939	521-1 Hydro Profile Cutterheads	2-34
137	50	80	4	50822791	525 Profile Cutterheads	2-32	150	50	260	4	58562932	521-1 Hydro Profile Cutterheads	2-34
140	30	13-33	2	68303301	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	150	50	260	6	58562940	521-1 Hydro Profile Cutterheads	2-34
140	30	13-33	2	68303302	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	150	50	310	4	58562933	521-1 Hydro Profile Cutterheads	2-34
140	30	13-36	2	68303304	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	150	50	310	6	58562941	521-1 Hydro Profile Cutterheads	2-34
140	30	13-36	2	68303305	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	150	50	60	4	58562926	521-1 Hydro Profile Cutterheads	2-34
140	30	13-36	2	68303306	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	150	50	60	6	58562934	521-1 Hydro Profile Cutterheads	2-34
140	30	13-36	2	68303307	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	160	20	6,0	12	50660304	HW NKP - Grooving Saw Blades prism	2-5
140	30	13-36	2	68303308	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	160	30	4,0-7,5	8 V8	68370033	HW 5561 Grooving Cutterheads - Silverline	2-9
140	30	13-40	2	68303303	HW 4010 Tongue and Groove Tool Set - Silverline	2-42	160	30	7,6	2	68370083	HW 5561 Grooving Cutterheads - Silverline	2-9
							160	30	8,0-15,5	4 V4	68380023	HW 5562 Grooving Cutterheads - Silverline	2-10
							160	30	12,5-24,0	4 V4	68390023	HW 5562 Grooving Cutterheads - Silverline	2-10
							160	30	15,0-30,0	4 V4	68400063	HW 5562 Grooving Cutterheads - Silverline	2-10

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Ø D [mm]	Ø d [mm]	B [mm]	Z	Order-No.	Program	Page	Ø D [mm]	Ø d [mm]	B [mm]	Z	Order-No.	Program	Page
160	30	37-48	2	50664655	HW 5554 Counter Profile Set	2-24	180	30	13-36	4	68302308	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
160	40	4,0-7,5	8 V8	68370034	HW 5561 Grooving Cutterheads - Silverline	2-9	180	30	13-40	4	68302303	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
160	40	7,6	2	68370084	HW 5561 Grooving Cutterheads - Silverline	2-9	180	30	4,0	18	50169685	HW Grooving Cutters HW	2-5
160	40	8,0-15,5	4 V4	68380024	HW 5562 Grooving Cutterheads - Silverline	2-10	180	30	5,0	18	50169684	HW Grooving Cutters HW	2-5
160	40	12,5-24,0	4 V4	68390024	HW 5562 Grooving Cutterheads - Silverline	2-10	180	30	8,0	18	50169683	HW Grooving Cutters HW	2-5
160	40	15,0-30,0	4 V4	68400064	HW 5562 Grooving Cutterheads - Silverline	2-10	180	30	10	18	50169682	HW Grooving Cutters HW	2-5
163	50	100	4	58562691	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-33	4	68302401	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	100	6	58562692	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-33	4	68302402	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	100	8	58562740	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-36	4	68302404	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	100	8	58562943	521-1 Hydro Profile Cutterheads	2-34	180	40	13-36	4	68302405	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	130	4	58562693	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-36	4	68302406	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	130	4	58562741	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-36	4	68302407	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	130	6	58562742	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-36	4	68302408	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	130	8	58562739	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	13-40	4	68302403	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	130	8	58562944	521-1 Hydro Profile Cutterheads	2-34	180	40	35	6	58532354	HS 4000 Tongue and Groove Tools	2-40
163	50	150	6	58562694	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	35	6	58532358	HS 4000 Tongue and Groove Tools	2-40
163	50	150	8	58562743	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	35	6	58532382	HS 4000 Tongue and Groove Tools	2-40
163	50	150	8	58562945	521-1 Hydro Profile Cutterheads	2-34	180	40	35	6	58532384	HS 4000 Tongue and Groove Tools	2-40
163	50	180	4	58562700	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	35	6	58532387	HS 4000 Tongue and Groove Tools	2-40
163	50	180	6	58562702	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	35	6+3	58532361	HS 4000 Tongue and Groove Tools	2-40
163	50	180	8	58562750	HS 520-1 Hydro Planing Cutterheads	2-29	180	40	35	6+3	58532390	HS 4000 Tongue and Groove Tools	2-40
163	50	180	8	58562946	521-1 Hydro Profile Cutterheads	2-34	180	40	35	6+3	58532391	HS 4000 Tongue and Groove Tools	2-40
163	50	230	4	58562695	HS 520-1 Hydro Planing Cutterheads	2-29	180	50	13-33	4	68302501	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	230	6	58562696	HS 520-1 Hydro Planing Cutterheads	2-29	180	50	13-33	4	68302502	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	230	8	58562744	HS 520-1 Hydro Planing Cutterheads	2-29	180	50	13-36	4	68302504	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	230	8	58562947	521-1 Hydro Profile Cutterheads	2-34	180	50	13-36	4	68302505	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	260	4	58562697	HS 520-1 Hydro Planing Cutterheads	2-29	180	50	13-36	4	68302506	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	260	6	58562698	HS 520-1 Hydro Planing Cutterheads	2-29	180	50	13-36	4	68302507	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	260	8	58562745	HS 520-1 Hydro Planing Cutterheads	2-29	180	50	13-36	4	68302508	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	260	8	58562948	521-1 Hydro Profile Cutterheads	2-34	180	50	13-40	4	68302503	HW 4010 Tongue and Groove Tool Set - Silverline	2-43
163	50	310	4	58562701	HS 520-1 Hydro Planing Cutterheads	2-29	200	30		2+2	68255130	HW 5540 Panel Raising Cutterheads - Silverline	2-20
163	50	310	6	58562703	HS 520-1 Hydro Planing Cutterheads	2-29	200	30		2+2	68255230	HW 5540 Panel Raising Cutterheads - Silverline	2-20
163	50	310	8	58562751	HS 520-1 Hydro Planing Cutterheads	2-29	200	30	7,6	2	68370103	HW 5561 Grooving Cutterheads - Silverline	2-9
163	50	310	8	58562949	521-1 Hydro Profile Cutterheads	2-34	200	30	4,0-7,5	8 V8	68370053	HW 5561 Grooving Cutterheads - Silverline	2-9
163	50	60	4	58562687	HS 520-1 Hydro Planing Cutterheads	2-29	200	30	8,0-15,5	4 V4	68380033	HW 5562 Grooving Cutterheads - Silverline	2-10
163	50	60	6	58562688	HS 520-1 Hydro Planing Cutterheads	2-29	200	30	12,0	2	68390073	HW 5562 Grooving Cutterheads - Silverline	2-10
163	50	60	8	58562738	HS 520-1 Hydro Planing Cutterheads	2-29	200	30	12,5-24,0	4 V4	68390033	HW 5562 Grooving Cutterheads - Silverline	2-10
163	50	60	8	58562942	521-1 Hydro Profile Cutterheads	2-34	200	30	15,0	2	68380073	HW 5562 Grooving Cutterheads - Silverline	2-10
167	30	50	2	50663009	HW Pivoting Cutterheads HW	2-17	200	30	15,0-30,0	4 V4	68400033	HW 5562 Grooving Cutterheads - Silverline	2-10
174	30	26	2+2	50664636	HW 5556 Miter Glue Joint Profile Cutterheads	2-25	200	40		2+2	68255140	HW 5540 Panel Raising Cutterheads - Silverline	2-20
180	30	13-33	4	68302301	HW 4010 Tongue and Groove Tool Set - Silverline	2-43	200	40		2+2	68255240	HW 5540 Panel Raising Cutterheads - Silverline	2-20
180	30	13-33	4	68302302	HW 4010 Tongue and Groove Tool Set - Silverline	2-43	200	40	7,6	2	68370104	HW 5561 Grooving Cutterheads - Silverline	2-9
180	30	13-36	4	68302304	HW 4010 Tongue and Groove Tool Set - Silverline	2-43	200	40	4,0-7,5	8 V8	68370054	HW 5561 Grooving Cutterheads - Silverline	2-9
180	30	13-36	4	68302305	HW 4010 Tongue and Groove Tool Set - Silverline	2-43	200	40	8,0-15,5	4 V4	68380034	HW 5562 Grooving Cutterheads - Silverline	2-10
180	30	13-36	4	68302306	HW 4010 Tongue and Groove Tool Set - Silverline	2-43	200	40	12,0	2	68390074	HW 5562 Grooving Cutterheads - Silverline	2-10
180	30	13-36	4	68302307	HW 4010 Tongue and Groove Tool Set - Silverline	2-43	200	40	12,5-24,0	4 V4	68390034	HW 5562 Grooving Cutterheads - Silverline	2-10
							200	40	15,0	2	68380074	HW 5562 Grooving Cutterheads - Silverline	2-10
							200	40	15,0-30,0	4 V4	68400034	HW 5562 Grooving Cutterheads - Silverline	2-10
							200	50	7,6	2	68370105	HW 5561 Grooving Cutterheads - Silverline	2-9
							200	50		2+2	68255150	HW 5540 Panel Raising Cutterheads - Silverline	2-20

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200	50		2+2	68255250	HW 5540 Panel Raising Cutterheads - Silverline	2-20
200	50	4,0-7,5	8 V8	68370055	HW 5561 Grooving Cutterheads - Silverline	2-9
200	50	8,0-15,5	4 V4	68380035	HW 5562 Grooving Cutterheads - Silverline	2-10
200	50	12,0	2	68390075	HW 5562 Grooving Cutterheads - Silverline	2-10
200	50	12,5-24,0	4 V4	68390035	HW 5562 Grooving Cutterheads - Silverline	2-10
200	50	15,0	2	68380075	HW 5562 Grooving Cutterheads - Silverline	2-10
200	50	15,0-30,0	4 V4	68400035	HW 5562 Grooving Cutterheads - Silverline	2-10
203	50	100	12	58562752	HS 520-1 Hydro Planing Cutterheads	2-29
203	50	150	12	58562753	HS 520-1 Hydro Planing Cutterheads	2-29
203	50	230	12	58562754	HS 520-1 Hydro Planing Cutterheads	2-29
203	50	260	12	58562755	HS 520-1 Hydro Planing Cutterheads	2-29
203	50	310	12	58562756	HS 520-1 Hydro Planing Cutterheads	2-29
203	50	330	12	58562757	HS 520-1 Hydro Planing Cutterheads	2-29
250	30	8,0-15,0	8 V8	68380043	HW 5562 Grooving Cutterheads - Silverline	2-10
250	40	8,0-15,0	8 V8	68380044	HW 5562 Grooving Cutterheads - Silverline	2-10
250	50	8,0-15,0	8 V8	68380045	HW 5562 Grooving Cutterheads - Silverline	2-10

# Diameter Index Shank-Type Cutters

Ø D [mm]	Ø d [mm]	L2 [mm]	Z	Order-No.	Program	Page	Ø D [mm]	Ø d [mm]	L2 [mm]	Z	Order-No.	Program	Page
4.0	4.0	15	2	50811418	VHW 2257 Finishing Cutters	3-8	14	16	20	2+1	50811809	High-Performance Roughing Shank-Type Cutters DP - for the machining of solid core panels	3-15
6.0	6.0	15	2	50811419	VHW 257-1 Finishing Cutters	3-9	14	16	33	3+3	58185799	DP 3506 High-Performance Shank-Type Cutters CM	3-20
6.0	6.0	15	2	50811420	VHW 2257 Finishing Cutters	3-8	16	16	115	2	50811929	VHW 2255 Lock-Case Finishing Cutters	3-12
6.0	12	12	1	50811684	DP 3501 Shank-Type Cutters	3-13	16	16	115	3	50811926	VHW 2254 Lock-Case Roughing Cutters	3-12
8.0	12	12	1	50811128	DP 3501 Shank-Type Cutters	3-13	16	16	22	1+1	58186794	DP 3502 Shank-Type Cutters	3-14
8.0	12	20	1	50811001	HW 2231 Shank-Type Cutters	3-1	16	16	22	3+3	58186573	DP 3506 High-Performance Shank-Type Cutters CM	3-20
8.0	8.0	30	2	50811034	VHW 257-1 Finishing Cutters	3-9	16	16	25.4	1	50811134	DP 3501 Shank-Type Cutters	3-13
8.0	8.0	30	2	50811421	VHW 2257 Finishing Cutters	3-8	16	16	28	1+1	58186795	DP 3502 Shank-Type Cutters	3-14
8.0	8.0	32	2+2	50811564	VHW 257-2 Finishing Cutters	3-10	16	16	28	2+2	50186147	3503 High-Performance Shank-Type Cutters DP - Z=2+2	3-17
9.8	12	23	2	58186879	Profile Grooving Shank-Type Cutters VHW - for Lamello Clamex P®	3-36	16	16	28	2+2	58186114	DP 3506 High-Performance Shank-Type Cutters CM	3-19
8.0	12	12	1	50811128	DP 3501 Shank-Type Cutters	3-13	16	16	28	3+3	50811803	DP 3506 High-Performance Shank-Type Cutters CM	3-20
8.0	12	20	1	50811001	HW 2231 Shank-Type Cutters	3-1	16	16	28	3+3	58186574	DP 3506 High-Performance Shank-Type Cutters CM	3-20
8.0	8.0	30	2	50811034	VHW 257-1 Finishing Cutters	3-9	16	16	30	1+1	50811903	HW 2235 Shank-Type Cutters	3-3
8.0	8.0	30	2	50811421	VHW 2257 Finishing Cutters	3-8	16	16	32	4(2+2)	58811950	3514 Roughing/finishing cutters	3-16
8.0	8.0	32	2+2	50811564	VHW 257-2 Finishing Cutters	3-10	16	16	35	1	50811136	DP 3501 Shank-Type Cutters	3-13
9.8	12	23	2	58186879	Profile Grooving Shank-Type Cutters VHW - for Lamello Clamex P®	3-36	16	16	35	1+1	58186796	DP 3502 Shank-Type Cutters	3-14
10	10	20	1	50811810	Profile Grooving Shank-Type Cutters HW - for Lamello Clamex P®	3-36	16	16	35	1+1	58186797	DP 3502 Shank-Type Cutters	3-14
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10	10	30	2	50811036	VHW 257-1 Finishing Cutters	3-9	16	16	35	2	50811407	VHW 2265-1 Roughing Cutters	3-7
10	10	30	2	50811401	VHW 2265-1 Roughing Cutters	3-7	16	16	35	2	50811428	VHW 2257 Finishing Cutters	3-8
10	10	30	2	50811402	VHW 2265 Roughing Cutters	3-6	16	16	35	3	50811028	VHW 2265-1 Roughing Cutters	3-7
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10	12	22	2	50811930	DP 3501 Shank-Type Cutters	3-13	16	16	50	1+1	50811904	HW 2236 Shank-Type Cutters	3-4
10	12	25	1	50811002	HW 2231 Shank-Type Cutters	3-1	16	16	52	2	50811071	VHW 2269 Plunge Finishing Cutters	3-11
12	12	22	1+1	58186790	DP 3502 Shank-Type Cutters	3-14	16	16	55	2	50811041	VHW 257-1 Finishing Cutters	3-9
12	12	25.4	1	50811132	DP 3501 Shank-Type Cutters	3-13	16	16	55	2	50811410	VHW 2265-1 Roughing Cutters	3-7
12	12	28	1+1	58186792	DP 3502 Shank-Type Cutters	3-14	16	16	55	2+2	50811567	VHW 257-2 Finishing Cutters	3-10
12	12	28	1+1	58186793	DP 3502 Shank-Type Cutters	3-14	16	16	55	3	50811408	VHW 2265-1 Roughing Cutters	3-7
12	12	30	1	50811003	HW 2231 Shank-Type Cutters	3-1	16	16	55	3	50811409	VHW 2265 Roughing Cutters	3-6
12	12	42	2	50811037	VHW 257-1 Finishing Cutters	3-9	16	16	55	3	50811432	VHW 257-1 Finishing Cutters	3-9
12	12	42	2	50811423	VHW 2257 Finishing Cutters	3-8	16	16	55	3	50811434	VHW 257-1 Finishing Cutters	3-9
12	12	42	2+2	50811566	VHW 257-2 Finishing Cutters	3-10	16	16	55	3	50811435	VHW 2257 Finishing Cutters	3-8
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14	14	35	3	50811026	VHW 2265-1 Roughing Cutters	3-7	18	20	43	1+1	58186808	DP 3502 Shank-Type Cutters	3-14
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20	20	28	2+2	50186150	3503 High-Performance Shank-Type Cutters DP - Z=2+2	3-17	90	20	76	2+2	50811833	HW 1524 Handrail cutterheads Z=2+2	3-35
20	20	35	1+1	58186809	DP 3502 Shank-Type Cutters	3-14	90	20	76	2+2	50811834	HW 1524 Handrail cutterheads Z=2+2	3-35
20	20	38	2+2	50186153	3503 High-Performance Shank-Type Cutters DP - Z=2+2	3-17	100	25	5,6	8	50811708	DP 3508 Planing and Rabbeting Shank-Type Cutters	3-25
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3.0	10	27	70	50600376	VHW 2022 Through-Hole Bits	4-105	8.0	10	12	57.5	50600390	HW 2060 Boring Countersink	4-114
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4.0	10	20	57.5	50600452	VHW 2041 Dowel Bits	4-110	8.0	10	27	57.5	50600109	HW 2032 Dowel Bits	4-107
4.0	10	20	57.5	50600453	VHW 2041 Dowel Bits	4-110	8.0	10	30	57.5	50600178	HW 2031 Dowel Bits	4-106
4.0	10	27	57.5	50600100	HW 2032 Dowel Bits	4-107	8.0	10	30	57.5	50600179	HW 2031 Dowel Bits	4-106
4.0	10	27	57.5	50600101	HW 2032 Dowel Bits	4-107	8.0	10	35	70	50600122	HW 2032 Dowel Bits	4-107
4.0	10	27	70	50600455	VHW 2041 Dowel Bits	4-110	8.0	10	35	70	50600123	HW 2032 Dowel Bits	4-107
4.0	10	27	70	50600456	VHW 2041 Dowel Bits	4-110	8.0	10	35	70	50600138	HW 2020 Through-Hole Bits	4-103
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5.0	10	27	57.5	50600102	HW 2032 Dowel Bits	4-107	8.0	10	43	77	50600327	HW 2020 Through-Hole Bits	4-103
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5.0	10	30	70	50600270	VHW 2041 Dowel Bits	4-110	9.0	10	27	57.5	50600110	HW 2032 Dowel Bits	4-107
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### Machines

 Portable saws	 Vertical panel sizing saw	 Four-side planing machine	 Double end tenoners
 Clipping and Mitre Saws	 Multi rip saw	 CNC router	 Not classified
 Table saw	 Portable router	 Spindle Moulder	 Akku-Portable saws
 Horizontal panel sizing saw	 Multi spindle drilling machine	 Edges	

### Application

 Abrasive	 Abrasive – excellently suited	 Abrasive – well suited
 Construction	 Construction – excellently suited	 Construction – well suited
 Wood	 Wood – excellently suited	 Wood – well suited
 Wood-based materials	 Wood-based materials – excellently suited	 Wood-based materials – well suited
 Aluminium	 Aluminium – excellently suited	 Aluminium – well suited
 Steel	 Steel – excellently suited	 Steel – well suited
 Plastic	 Plastic – excellently suited	 Plastic – well suited

### Design / Features

 Aluminium body	<b>HS</b> High speed steel	<b>HSK</b> HSK adapters	<b>R/L</b> Right hand / Left hand
 Solid tungsten carbide body	<b>DP</b> Polycrystalline diamond	 No. of ground cutting edges	 Hard wood
 Resharpener area in mm	<b>DM</b> Monocrystalline diamond	 Recommended feed	 Soft woods
 For cross cuts	<b>VHW</b> Solid tungsten carbide	 Stammbblatt beschichtet	<b>LOW NOISE</b> Low noise level
 For profile trimming	<b>SK</b> SK adapters	 Maximum RPM	<b>MAN</b> Manual feed
<b>HW TC02</b> Tungsten carbide quality	<b>BT</b> BT adapters	 For Micro chips	<b>MEC</b> Mechanical feed

### Tooth Configurations

 Flat „F“	<b>F</b>	 Alternate top bevel „WS“	<b>WS</b>	 Inverted-v/ Flat „DA-F“	<b>DA-F</b>
 hollow back tooth	<b>HR</b>	 Alternate top bevel with chamfer „WS-FA“	<b>WS-FA</b>	 inverted-v / flat tooth / hollow-ground tooth	<b>D-F DU</b>
 Flat with alternating chamfer „F-WFA“	<b>F-WFA</b>	 Triple chip - flat „TR-F“	<b>TR-F</b>	 inverted-v / flat tooth with chamfer / hollow-ground tooth	<b>DA-F-FA DU</b>
 Flat ATB ATB „F-WS-WS“	<b>F-WS-WS</b>	 Triple chip - flat with two-sided chamfer „TR-F-FA“	<b>TR-F-FA</b>	 Conical-flat „KO-F“	<b>KO-F</b>
 alternate top bevel with shear angle „WSA“	<b>WSA</b>	 triple chip / flat - flat / hollow-ground tooth „TR-F-F DU“	<b>TR-F-F DU</b>	 G7	<b>G7</b>
 V-tooth „V“	<b>V</b>	 flat with chamfer „F-FA“	<b>F-FA</b>	 top bevel „ES (right + left)“	<b>ES</b>

### Miscellaneous

 Suited
 Particularly suited
<b>RS</b> Scoring saw

### Lieferkennzeichen

 Modification and/or mounting of stock parts	<b>S</b> Production per drawing
<b>O</b> available on short notice	<b>#</b> Discontinued, subject to availability

All Ident-No. are available from stock unless specifically indicated



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