Routing

Leitz Lexicon Edition 7 | Version 3 | 11/2023

Explanation of abbreviations

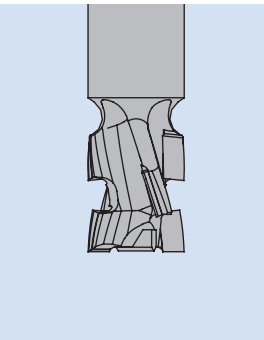
A	=	dimension A
a_e	=	cutting thickness (radial)
a_p	=	cutting depth (axial)
ABM	=	dimension
APL	=	panel raising length
APT	=	panel raising depth
AL	=	working length
AM	=	number of knives
AS	=	anti sound (low noise design)
b	=	overhang
B	=	width
BDD	=	thickness of shoulder
BEM	=	note
BEZ	=	description
BH	=	tipping height
BO	=	bore diameter
CNC	=	Computerized Numerical Control
d	=	diameter
D	=	cutting circle diameter
D0	=	zero diameter
DA	=	outside Diameter
DB	=	diameter of shoulder
DFC	=	Dust Flow Control (optimised chip clearance)
DGL	=	number of links
DIK	=	thickness
DKN	=	double keyway
DP	=	polycrystalline diamond
DRI	=	rotation
FAB	=	width of rebate
FAT	=	depth of rebate
FAW	=	bevel angle
FLD	=	flange diameter
f_z	=	tooth feed
$f_{z\ eff}$	=	effective tooth feed
GEW	=	thread
GL	=	total length
GS	=	Plunging edge
H	=	height
HC	=	tungsten carbide, coated
HD	=	wood thickness (thickness of workpiece)
HL	=	high-alloyed tool steel
HS	=	high-speed steel (HSS)
HW	=	tungsten carbide (TCT)
ID	=	ident number
IV	=	insulation glazing
KBZ	=	abbreviation
KLH	=	clamping height
KM	=	edge breaker
KN	=	single keyway
KNL	=	combination pinhole consists of 2/7/42 2/9/46,35 2/10/60
L	=	length
l	=	clamping length
LD	=	left hand twist
LEN	=	Leitz standard profiles
LH	=	left hand rotation
M	=	metric thread
MBM	=	minimum order quantity
MC	=	multi-purpose steel, coated
MD	=	thickness of knife
min^{-1}	=	revolutions per minute (RPM)
MK	=	morse taper
m min^{-1}	=	metres per minute
m s^{-1}	=	metres per second
n	=	RPM
$n_{max.}$	=	maximum permissible RPM
NAL	=	position of hub
ND	=	thickness of hub
NH	=	zero height
NL	=	cutting length
NLA	=	pinhole dimensions
NT	=	grooving depth
P	=	profile
POS	=	cutter position
PT	=	profile depth
PG	=	profile group
QAL	=	cutting material quality
R	=	radius
RD	=	right hand twist
RH	=	right hand rotation
RP	=	radius of cutter
S	=	shank dimension
SB	=	cutting width
SET	=	set
SLB	=	slotting width
SLL	=	slotting length
SLT	=	slotting depth
SP	=	tool steel
ST	=	Cobalt-basis cast alloys, e.g. Stellite™
STO	=	shank tolerance
SW	=	cutting angle
TD	=	diameter of tool body
TDI	=	thickness of tool
TG	=	pitch
TK	=	reference diameter
UT	=	cutting edges with irregular pitch
V	=	number of spurs
v_c	=	cutting speed
v_f	=	feed speed
VE	=	packing unit
VSB	=	adjustment range
WSS	=	workpiece material
Z	=	number of teeth
ZA	=	number of fingers
ZF	=	tooth shape (cutting edge shape)
ZL	=	finger length

Notes to the Lexicon concerning the diagrams and tables

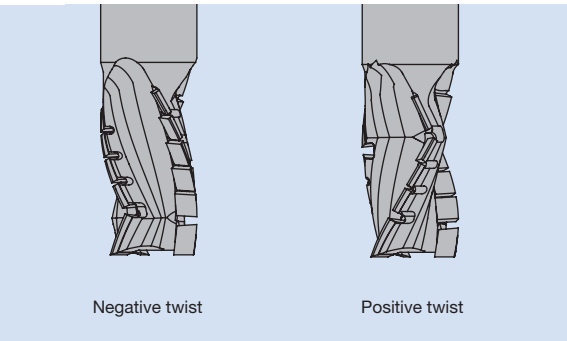
The statements made in the diagrams and tables relate to specific conditions and represent parameters from tests subjected to defined conditions. Variations when using tools in individual case due to special application conditions may be possible. Our support team will provide you with detailed information.

5. Routing

Working step/Application	Sizing and grooving.
Workpiece material [recommended cutting material]	Softwood and hardwood [SP - softwood only, HS, HW, HW solid]. Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc. [HW, HW solid, DP]. Plywood [HW, HW solid, DP]. Duromers [HW, HW solid, DP]. Plastomers [HS, HW, HW solid, DP]. Solid surface material (Corian, Varicor etc.) [HW, HW solid, DP]. Decorative laminates (HPL-compact laminate, Trespa etc.) [HW solid, DP]. Non-ferrous metal (Aluminium, copper etc.) [HS, HW, HW solid, DP].
Machine	Stationary routers with/without CNC control. Milling machines with spindles to mount shank tools. Portable routers.
Operation	Sizing, separating cuts (full cut), climb cut, conventional cut.
Cutting edge type	**Straight cutting edge**



Straight edges with shear angle.



Straight edges with shear angle, spiral design.

Spiral cutting edges

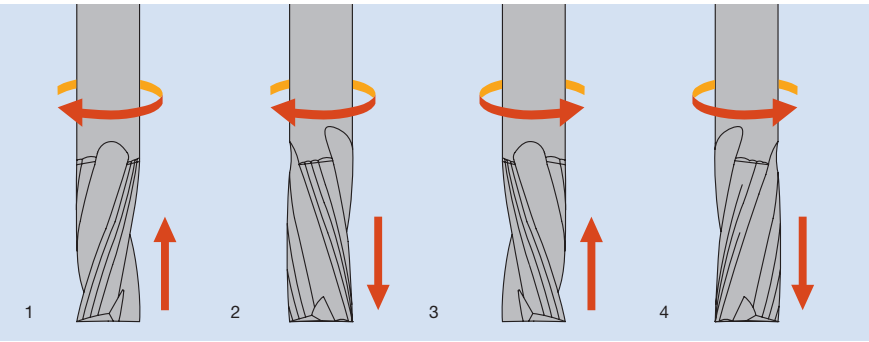


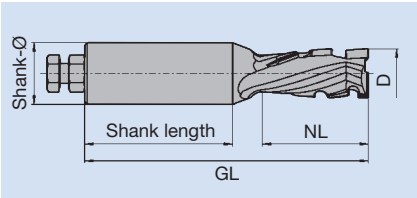
Fig. 1: RH-RD
positive twist,
workpiece face side to bottom,
good chip flow into dust extraction.

Fig. 2: RH-LD
negative twist,
workpiece face side to top,
supports workpiece clamping.

Fig. 3: LH-LD
positive twist,
workpiece face side to bottom,
good chip flow into dust extraction.

Fig. 4: LH-RD
negative twist,
workpiece face side to top,
supports workpiece clamping.

Technical features



The dimensions in the table below refer to the following tool parameters:

D	Diameter of the cutting edge
NL	Usable cutting length with specified number of teeth
AL	Possible working length, reached in separate steps
GL	Total length of the tool
d	Diameter of the shank, e.g. S25 x 60 -> Ø 25 mm
l	Maximum clamping length of the shank, e.g. S25 x 60 -> 60 mm

Shank tolerances

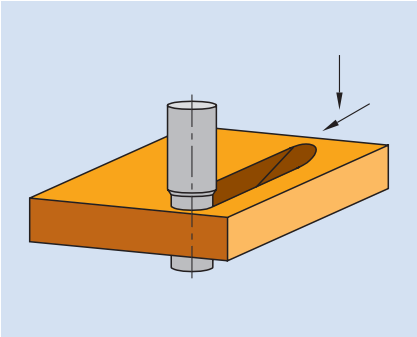
	Shank diameter	
Tools for	< 12 mm	≥ 12 mm
CNC routers	h6	g6
Portable routers	g7/h8	–

Application parameters

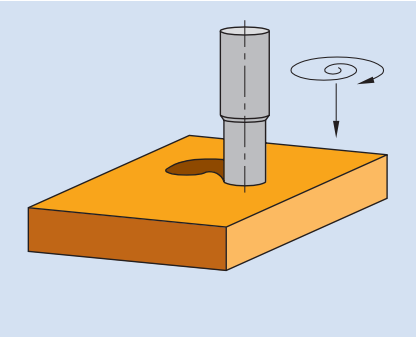
RPM/feed speed
The recommended RPM and feed speeds are detailed in the diagrams next the tool tables.

Operation notes

Recommended plunging methods:
The following plunging methods are recommended for sizing and grooving tools:

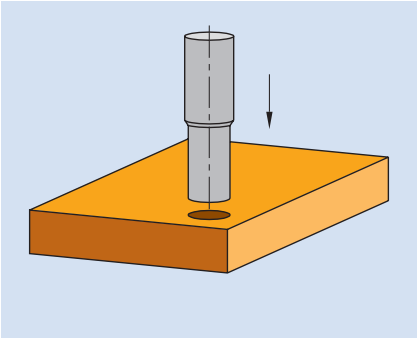


Ramp plunging



Spiral plunging

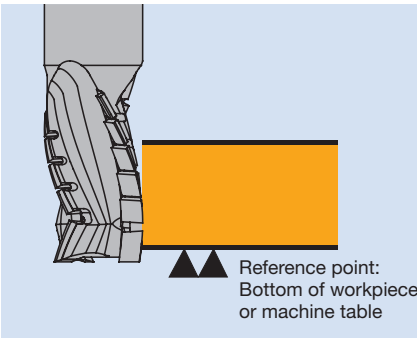
Router bits with mainly negative cutting shear angles and HW solid router bits with RH/LD and LH/RD and router bits without plunging edge are not suitable for axial plunging.



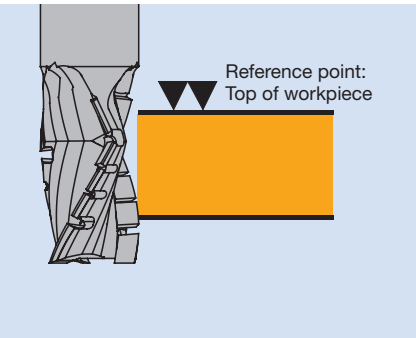
Axial plunging

Position the tool relative to the workpiece

Tools with high negative shear angle.



Tools with high positive shear angle..



Workpiece clamping

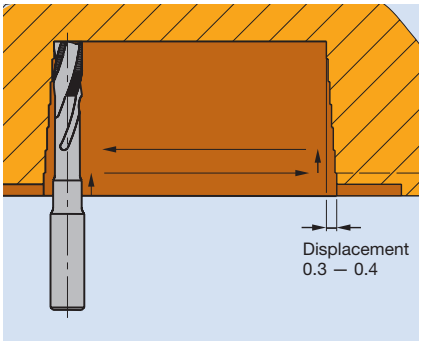
Sufficient workpiece clamping is very important on stationary machines. Insufficient clamping can reduce both the cut quality and tool life considerably. Panels can be held in place with vacuum clamping, but sometimes additional mechanical clamping is required.
Small and and arched workpieces in particular require special jigs or clamping devices which must be made by the customer or sourced from specialist suppliers.

Chip removal

For optimum chip removal, tools with predominantly or only positive shear cut should be used. Check there is sufficient workpiece clamping.

Machining deep slots

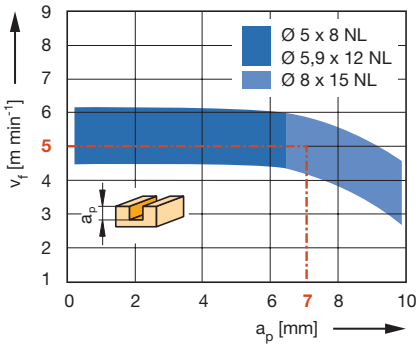
Cutting lock mortises in door production.



Reducing the slot cutting width by approx 0.1 mm per stroke reduces the risk of breakage as the tool does not touch the side of the slot with the full length of the tool.

HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Duromers, plastomers, compound materials
Operation: Grooving, sizing
Speed: n = 16000 - 18000 min^{-1}

Grooving cutter, straight cut

Application:
Router cutter for grooving.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools, portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.), non-ferrous metals (aluminium, copper etc.), PVC profile extrusions.

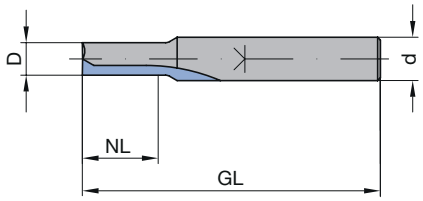
Technical information:
Straight cut. End-ground for plunging. Large resharpening area. Good cutting performance in plastic and compound materials.

HW solid, Z 1
WO 120 2

D mm	GL mm	NL mm	S mm	QAL	DRI	ID
8	70	27	8x30	HW solid	RH	**044468** ●

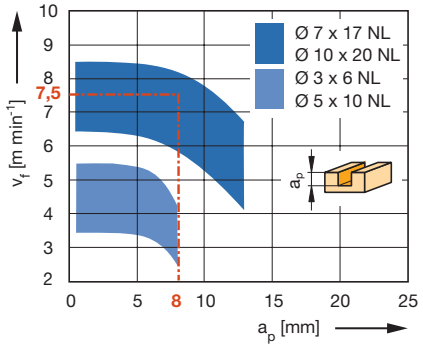
RPM: n_{max} = 24000 min^{-1}


HW



ID **041984**

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Grooving
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Solid wood = 0.8; Glulam = 0.8;
Machining across grain = 0.7

Grooving cutter, straight cut

Application:
Router cutter for sizing and grooving.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools, portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.), non-ferrous metals (aluminium, copper etc.), PVC profile extrusions.

Technical information:
Straight cut. End-ground for plunging. Large resharpening area. Short design for increased stability and reduced vibration. Long design for increased cutting depth (recommended in several steps).

HW solid, Z 2, short design
WO 120 1 16

D mm	GL mm	NL mm	S mm	DRI	ID
3	50	6	6x30	RH	**041979** ●
4	50	7	6x30	RH	**041952** ●
4.5	50	8	6x30	RH	**041953** ●
5	50	10	6x30	RH	**041954** ●
6	50	14	6x30	RH	**041956** ●
7	55	17	8x30	RH	**041958** ●
8	55	20	8x30	RH	**041985** ●
9	70	18	10x40	RH	**041961** ●
10	70	20	10x40	RH	**041962** ●
12	70	25	12x40	RH	**041963** ●

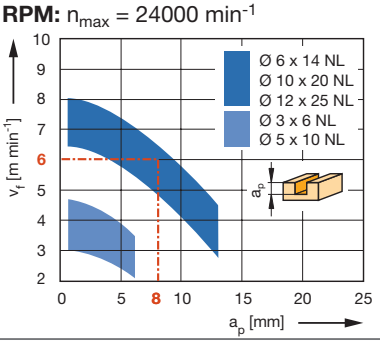
HW solid, Z 2, short design, reinforced shank
WO 120 1 16

D mm	GL mm	NL mm	S mm	DRI	ID
3	55	6	8x40	RH	**041981** ●
4	55	10	8x40	RH	**041982** ●
5	55	12	8x40	RH	**041983** ●
6	55	14	8x40	RH	**041984** ●

HW solid, Z 2, long design
WO 120 1 16

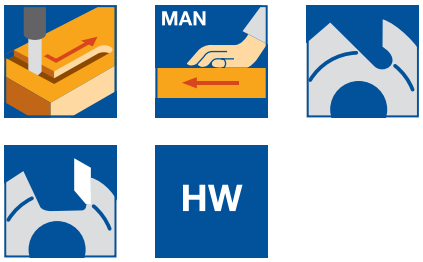
D mm	GL mm	NL mm	S mm	DRI	ID
3	60	12	6x30	RH	**041964** ●
4	60	12	6x40	RH	**041965** ●
5	80	18	6x40	RH	**041966** ●

RPM: n_{max} = 24000 min^{-1}

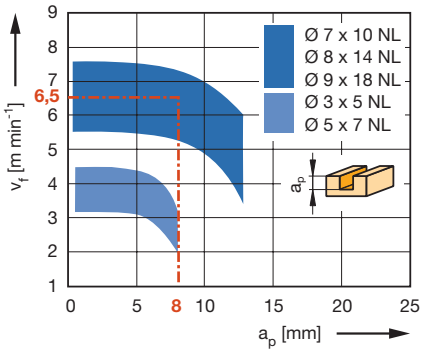


Workpiece material: Duromers, plastomers, Corian
Operation: Grooving
Speed: n = 16000 - 18000 min^{-1}

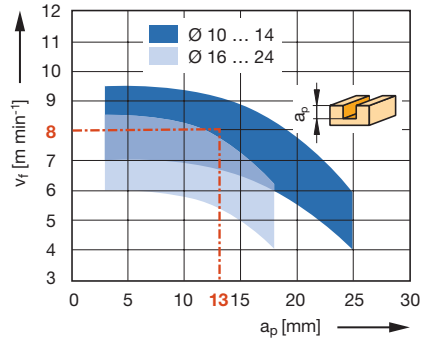
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Grooving
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Solid wood = 0.8; Glulam = 0.8;
Machining across grain = 0.7



Grooving cutter, Z 2

Application:
Router cutter for sizing and grooving.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools, portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut, tungsten carbide plunging tip.

HW, Z 2, shank 9.5 / 12 mm
WO 120 1 01

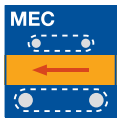
D	GL	NL	S	QAL	DRI	ID
mm	mm	mm	mm			
3	34	5	9,5x20	HW solid	RH	**038014** ●
5	39	7	9,5x20	HW solid	RH	**038018** ●
10	52	20	9,5x20	HW	RH	**038028** ●
12	72	25	12x40	HW	RH	**038115** ●
13	72	25	12x40	HW	RH	**038116** ●
14	76	28	12x40	HW	RH	**038117** ●
15	80	30	12x40	HW	RH	**038118** ●
16	90	35	12x40	HW	RH	**038147** ●
18	90	35	12x40	HW	RH	**038148** ●
20	90	35	12x40	HW	RH	**038149** ●
25	92	41	12x40	HW	RH	**038125** ●

HW, Z 2, shank 10 mm
WO 120 1 01

D	GL	NL	S	QAL	DRI	ID
mm	mm	mm	mm			
4	49	10	10x35	HW solid	RH	**038053** ●
5	49	12	10x35	HW solid	RH	**038054** ●
6	53	14	10x35	HW solid	RH	**038055** ●
7	55	17	10x35	HW solid	RH	**038056** ●
8	60	20	10x35	HW solid	RH	**038057** ●
10	70	23	10x35	HW	RH	**038058** ●
12	70	23	10x35	HW	RH	**038059** ●

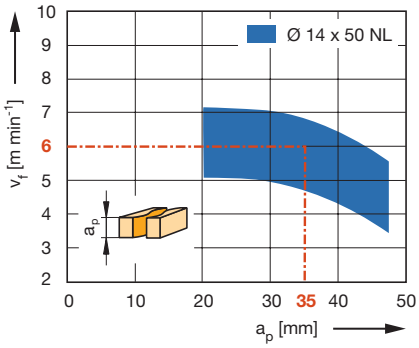
RPM: n = 16000 - 36000 min^{-1}

Workpiece material: Plastic coated chipboard
Operation: Grooving
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Solid wood = 0.8; Glulam = 0.8;
Machining across grain = 0.7



HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated or veneered chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Machining across grain = 0.7

Grooving cutter with shear angle

Application:
Router cutter for sizing, grooving and cutting apertures.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

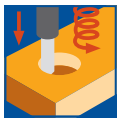
Technical information:
Finishing type Z 1+1 particularly to machine apertures in furniture and doors. Cutting edges with alternating shear angles for tear-free edges on both sides.

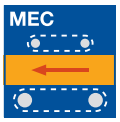
HW, Z 1+1, finishing cut processing
WO 140 2

D mm	GL mm	NL mm	S mm	DRI	ID
14	100	50	12x50	RH	**038204** ●
14	100	50	14x50	RH	**038205** ●
14	120	50	25x60	RH	**038206** ●

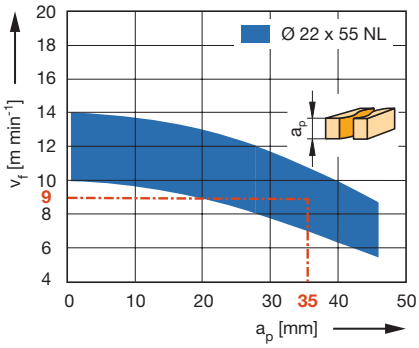
RPM: n_{max} = 24000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8

Roughing router cutter in turnblade design

Application:
Router cutter for sizing and grooving to roughing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Tungsten carbide turnblade knives arranged in irregular pitch for quiet cutting.
With turnblade knife plunging tip.

HW, Z 1+1
WL 101 2

D mm	GL mm	NL mm	S mm	DRI	ID
22	125	55	25x60	RH	**041922** ●

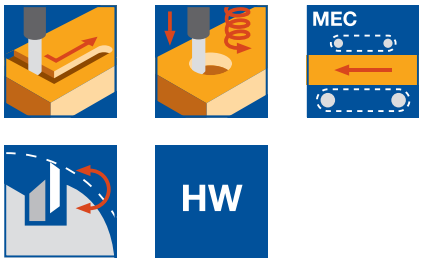
RPM: n = 16000 - 24000 min^{-1}

Spare knives:

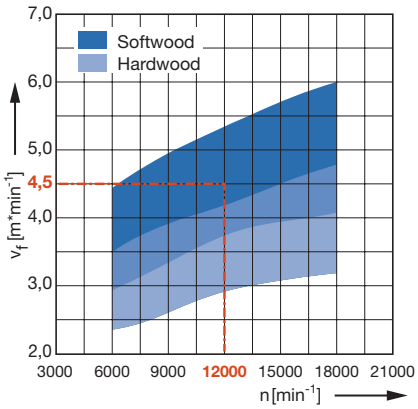
BEZ	ABM mm	QAL	VE PCS	ID
Turnblade knife	9x12x1.5	HW-05F	10	**005158** ●
Turnblade knife	12x12x1.5	HW-05F	10	**005081** ●

Spare parts:

BEZ	ABM mm	ID
Oval head screw Torx® 15	M4x5	**007037** ●
Oval head screw Torx® 15	M4x6	**006225** ●
Torx® key	Torx® 15	**005457** ●



Feed speed v_f depending on RPM n



Workpiece material: Softwood, Hardwood
Operation: Sizing and grooving
Axial infeed: a_p = 20 - 50 mm
Correction factor for v_f: Glulam = 0.8

Roughing router cutter in turnblade design - HeliCut 11

Application:
Router for sizing and grooving to roughing/finishing quality. Cutting of tenons for frame constructions.

Machine:
Stationary routers with/without CNC control, machining centres, joinery machines, milling maschines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, glulam and laminated wood.

Technical information:
Spiral shaped edge arrangement of the tungsten carbide turnblades (4 times turnable). Tungsten carbice turnblade plunging knife with chipbreakers for good chip removal (for D = 40 mm). Tangential fixing of the knives in the dust protected area. Deep boreholes are to be cut circularly.

HW, Z 2+2
WL 101 2

D mm	GL mm	NL mm	S mm	DRI	ID
30	125	60	20x50	RH	**041928** ●
30	195	120	30x53	RH	**041929** ●
40	235	160	30x53	RH	**041927** ●

RPM: n = 6000 - 18000 min^{-1}

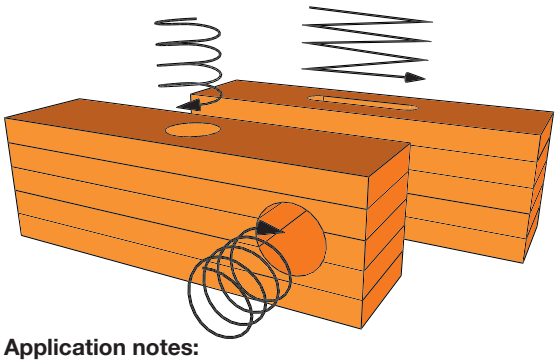
Note:
Tool shank S30x53 with recess suitable for many conventional joinery machines. Not suitable for use in shrink-fit chucks.
On machines with automatic tool changer use collet chuck ER40 together with collet d = 30 mm, ID **679039**.

Spare knives:

BEZ	Knife	ABM mm	for D mm	QAL	VE PCS	ID
Turnblade knife	Peripheral tip	11x11x1.5		HW	10	**602515** ●
Turnblade knife	Peripheral tip	11x11x1.5		TDC		**602904** ●
Exchange knife	Plunging tip	20,6x12.7x2	30	HW	10	**602531** ●
Exchange knife	Plunging tip	22x12.7x2	40	HW	10	**602516** ●

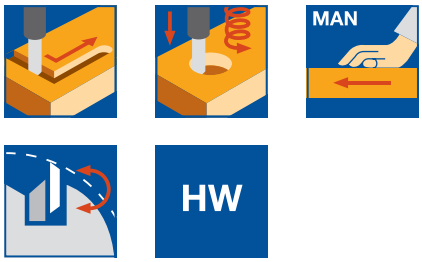
Spare parts:

BEZ	ABM mm	ID
Countersink screw, Torx® 15	M4x6	**114039** ●
Countersink screw, Torx® 20	M5x6	**114040** ●
Torx® key	Torx® 15	**005457** ●
Torx® key	Torx® 20	**117520** ●

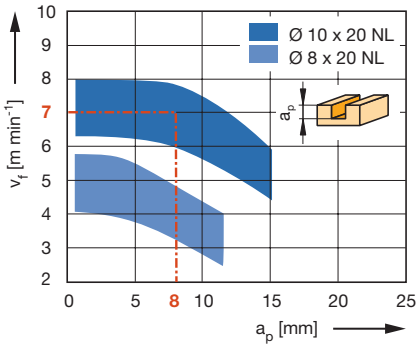


Application notes:
Circular pockets and boreholes of a depth > 1xD have to be cut circularly.
Use ramp-in cutting to produce mortises.

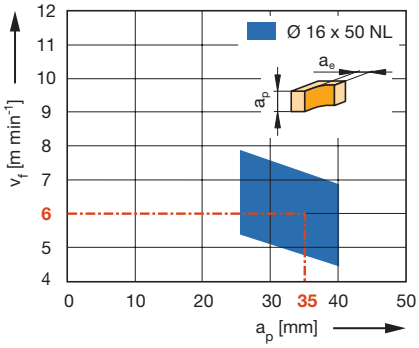
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Grooving, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8



Grooving router cutter in turnblade design

Application:
Router cutter for sizing and grooving to finish quality.

Machine:
Portable routers, limited suitable: stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

Technical information:
Tungsten carbide turnblade knife clamped by wedge. Design without plunging tip only suitable for ramp plunging. Design with plunging tip limited suitable for axial plunging.

HW, Z 1, without plunging tip
WL 100 1

D mm	GL mm	NL mm	S mm	DRI	ID
8	65	20	10x40	RH	**041624** ●
9	65	20	10x40	RH	**041631** ●
10	65	20	10x40	RH	**041638** ●
10	70	25	10x40	RH	**041643** ●
11	75	30	10x40	RH	**041655** ●
12	76	30	10x40	RH	**041667** ●
14	86	40	12x40	RH	**041679** ●
16	94	50	12x40	RH	**041685** ●
16	109	50	16x50	RH	**041714** ●

RPM: D 8 - 12 mm: n = 18000 - 24000 min^{-1}
D 14 - 20 mm: n = 16000 - 24000 min^{-1}

Spare knives:

BEZ	ABM mm	for D mm	NL mm	QAL	VE PCS	ID
Turnblade knife	20x4.1x1.1	8 - 9	20	HW-05	10	**005186** ●
Turnblade knife	20x5.5x1.1	10 - 12	20	HW-05	10	**005187** ●
Turnblade knife	25x5.5x1.1	10	25	HW-05	10	**005188** ●
Turnblade knife	30x5.5x1.1	11 - 24	30	HW-05	10	**005189** ●
Turnblade knife	40x5.5x1.1	14	40	HW-05	10	**005190** ●
Turnblade knife	50x5.5x1.1	14 - 24	50	HW-05	10	**005191** ●

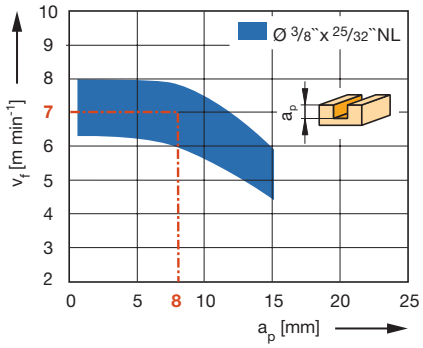
Spare parts:

BEZ	ABM mm	for D mm	NL mm	ID
Clamping wedge	17.5x5.15x2.8	8 - 9	20	**009258** ●
Clamping wedge	17.5x6.45x4	10 - 11	20	**009259** ●
Clamping wedge	22.5x6.54x4	10	25	**009260** ●
Clamping wedge	27.5x6.45x4	11	30	**009261** ●
Clamping wedge	27.5x7.35x3.7	12 - 14	30	**009263** ●
Clamping wedge	37.5x7.35x3.7	14	40	**009264** ●
Clamping wedge	47.5x10.28x4.2	16 - 24	50	**009266** ●
Countersink screw, Torx® 8	M2.5x5.7	8 - 11		**006231** ●
Countersink screw, Torx® 8	M3x7.6	12 - 14		**006233** ●
Countersink screw, Torx® 15	M4x9.5	16		**007847** ●
Countersink screw, Torx® 15	M4x11.5	16 - 20		**006234** ●

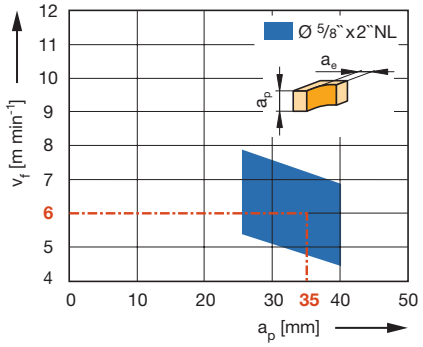
Workpiece material: Plastic coated chipboard
Operation: Jointing (max. a_e = 3 mm)
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8

HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Grooving, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8



Workpiece material: Plastic coated chipboard
Operation: Jointing
(maximum chip removal a_e = 3 mm)
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8

Grooving router cutter in turnblade design

Application:
Router cutter for sizing and grooving to finish quality.

Machine:
Portable routers, stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

Technical information:
Tungsten carbide turnblade knife clamped by wedge. Design without plunging tip only suitable for ramp plunging. Design with plunging tip limited suitable for axial plunging.

HW, Z 1, with plunging tip
WL 100 1

D mm	GL mm	NL mm	S mm	DRI	ID
14	107	45	12x40	RH	**041722** ●

RPM: n = 16000 - 24000 min^{-1}

Spare knives:

BEZ	ABM mm	NL mm	QAL	VE PCS	ID
Turnblade knife	50x5.5x1.1	50	HW-05	10	**005191** ●

Spare parts:

BEZ	ABM mm	ID
Clamping wedge with plunging tip	45x3.7x7.35	**009749** ●
Countersink screw, Torx® 8	M3x7.6	**006233** ●

HW, Z 1, without plunging tip, inch types
WL 100 1

D in	NL in	GL in	S in	DRI	ID
1/2"	1 3/16"	2 3/4"	1/2" x 1 3/8"	RH	**041060** ●
3/4"	2"	3 7/8"	3/4" x 1"	RH	**041067** ●

RPM: D 1/2": n = 18000 - 24000 min^{-1}
D 3/4": n = 16000 - 24000 min^{-1}

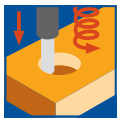
Spare knives:

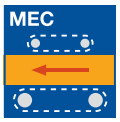
BEZ	ABM mm	for D in	NL in	QAL	VE PCS	ID
Turnblade knife	30x5.5x1.1	1/2"	1 3/16"	HW-05	10	**005189** ●
Turnblade knife	50x5.5x1.1	5/8" - 3/4"	2"	HW-05	10	**005191** ●

Spare parts:

BEZ	ABM mm	for D in	NL in	ID
Clamping wedge	27.5x7.35x3.7	1/2" - 35/64"	1 3/16"	**009263** ●
Clamping wedge	47.5x10.28x4.2	5/8" - 3/4"	2"	**009266** ●
Countersink screw, Torx® 8	M3x7.6	1/2"		**006233** ●
Countersink screw, Torx® 15	M4x11.5	5/8" - 3/4"		**006234** ●

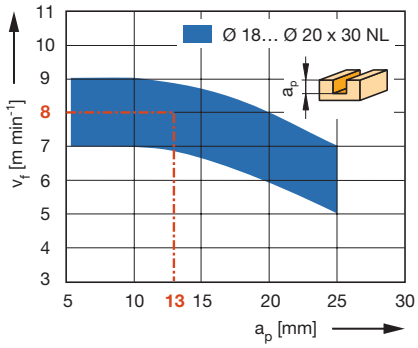
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



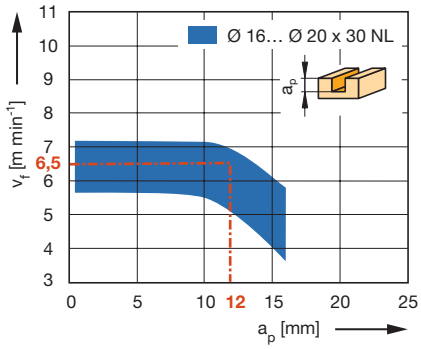


HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Grooving, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8



Router cutter in turnblade design

Application:
Router cutter for sizing and grooving to finish quality. For grooving with constant tool diameter.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Straight cut. Knife tip designed for seamless cut. Teflon coated tool body for reduced resin and glue build up. With tungsten carbide plunging tip. Suitable for machining the narrow edge of painted or foil coated MDF.

HW, Z 1, NL 30 mm
WL 101 1

D mm	GL mm	NL mm	S mm	ID LH	ID RH
16	85	30	12x40		**040867** ●
16	95	30	16x50	**040877** ●	**040878** ●
16	95	30	20x50		**040879** ●
16	105	30	25x60		**040872** ●
18	85	30	12x40		**040869** ●
20	85	30	12x40		**040871** ●
20	95	30	20x50		**040882** ●

RPM: n = 16000 - 20000 min^{-1}

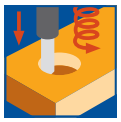
Spare knives:

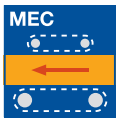
BEZ	Knife	ABM mm	for D mm	QAL	VE PCS	ID
Turnblade knife	Plunging tip	7.6x12x1.5	16 - 18	HW-05F	10	**005080** ●
Turnblade knife	Plunging tip	9x12x1.5	20 - 24	HW-05F	10	**005158** ●
Turnblade knife	Peripheral tip	30x12x1.5		HW-05F	10	**005161** ●

Spare parts:

BEZ	Knife	ABM mm	for D mm	ID
Screw	Plunging tip	M3.5x4 (head D7)	16 - 20	**006068** ●
Screw	Peripheral tip	M3.5x4 (head D9)	16 - 20	**006226** ●
Torx® key		Torx® 15		**005457** ●

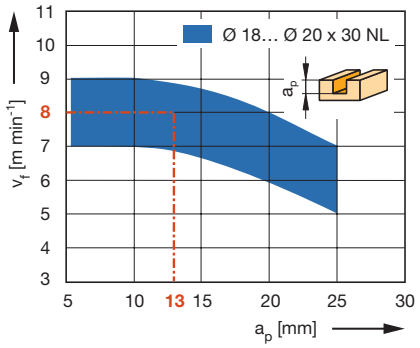
Workpiece material: Hardwood, along grain
Operation: Grooving, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Machining across grain = 0.8



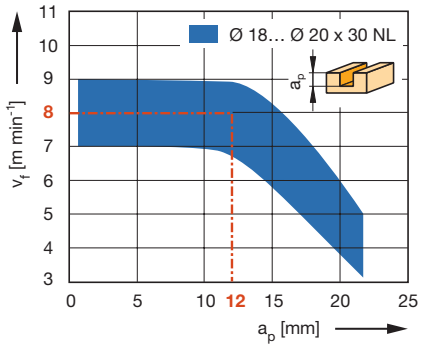


HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Grooving, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8



Workpiece material: Softwood, along grain
Operation: Grooving, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Machining across grain = 0.8

Router cutter in turnblade design

Application:
Router cutter for sizing and grooving to finish quality. For grooving with constant tool diameter.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools or portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Straight cut. Knife tip designed for seamless cut. Teflon coated tool body for reduced resin and glue build up. With tungsten carbide turnblade knife plunging edge.

HW, Z 1, inch types
WL 101 1

D in	NL in	GL in	S in	DRI	ID
5/8“	1 11/64“	3 5/8“	1/2“ x 1 3/8“	RH	**041084** ●

RPM: n = 16000 - 20000 min^{-1}

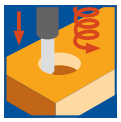
Spare knives:

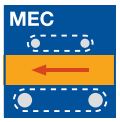
BEZ	Knife	ABM mm	QAL	VE PCS	ID
Turnblade knife	Plunging tip	7.6x12x1.5	HW-05F	10	**005080** ●
Turnblade knife	Peripheral tip	30x12x1.5	HW-05F	10	**005161** ●

Spare parts:

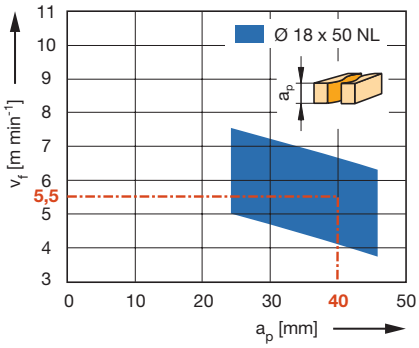
BEZ	Knife	ABM mm	ID
Screw	Plunging tip	M3.5x4 (head D7)	**006068** ●
Screw	Peripheral tip	M3.5x4 (head D9)	**006226** ●
Torx® key		Torx® 15	**005457** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8

Router cutter in turnblade design

Application:
Router cutter for sizing and grooving. For grooving with constant tool diameter.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

Technical information:
Straight cut. Teflon coated tool body for reduced resin and glue build up. Limited suitable for finish cut. Cutting edge overlap visible on workpiece. With tungsten carbide turnblade knife plunging tip.

HW, Z 1+1, with staggered cutting edges
WL 101 2

D mm	GL mm	NL mm	S mm	DRI	ID
18	125	50	25x60	RH	**040925** ●
20	133	58	25x60	RH	**040928** ●

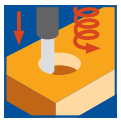
RPM: n = 16000 - 20000 min^{-1}

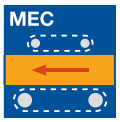
Spare knives:

BEZ	Knife	ABM mm	for D mm	QAL	VE PCS	ID
Turnblade knife	Plunging tip	7.6x12x1.5	16 - 18	HW-05F	10	**005080** ●
Turnblade knife	Plunging tip	9x12x1.5	20 - 24	HW-05F	10	**005158** ●
Turnblade knife	Peripheral tip	30x12x1.5		HW-05F	10	**005161** ●

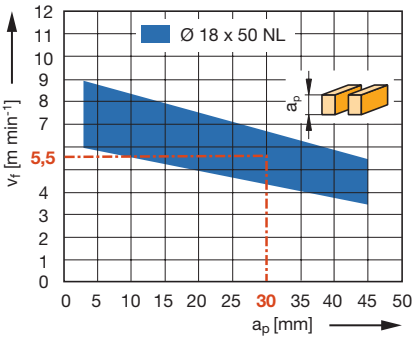
Spare parts:

BEZ	Knife	ABM mm	for D mm	ID
Oval head screw Torx® 15	Plunging tip	M4x5	18 - 24	**007037** ●
Oval head screw Torx® 15	Peripheral tip	M4x5	18 - 24	**007038** ●
Torx® key		Torx® 15		**005457** ●





Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8

Router cutter in turnblade design

Application:
Router cutter for sizing and grooving to finish quality. For grooving with constant tool diameter.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

Technical information:
Straight cut. Teflon coated tool body for reduced resin and glue build up. Limited suitable for finish cut. Cutting edge overlap visible on workpiece. With tungsten carbide turnblade knife plunging tip.

HW, Z 1+1, with 50 mm/30 mm turnblade knives
WL 101 1

D mm	GL mm	NL mm	S mm	ID LH	ID RH
18	115	50	16x50		**040847** ●
18	115	50	20x50		**040848** ●
18	125	50	25x60	**040849** ●	**040850** ●

RPM: n = 16000 - 20000 min^{-1}

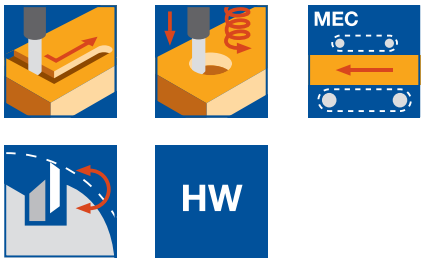
Spare knives:

BEZ	Knife	ABM mm	QAL	VE PCS	ID
Turnblade knife	Plunging tip	7.6x12x1.5	HW-05F	10	**005080** ●
Turnblade knife	Peripheral tip	30x12x1.5	HW-05F	10	**005161** ●
Turnblade knife	Peripheral tip	50x12x1.7	HW-05F	10	**007668** ●

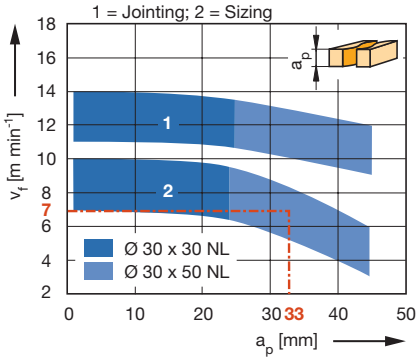
Spare parts:

BEZ	Knife	ABM mm	ID
Oval head screw Torx® 15	Plunging tip	M4x5	**007037** ●
Oval head screw Torx® 15	Peripheral tip	M4x5	**007038** ●
Torx® key		Torx® 15	**005457** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on grooving depth a_p
1 = Jointing cut a_e = 0.5 - 2 mm
2 = Sizing cut



Workpiece material: Plastic coated chipboard
Operation: Jointing, sizing
Speed: n =18000 min^{-1}
Correction factor for v_f:
Machining across grain = 0.7; MDF = 0.8

Router cutter in turnblade design

Application:
Router cutter for sizing, grooving and finish cutting to finish quality. Z 2 for increased feed rates.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut. Knife tip designed for seamless cut. Design with plunging tip limited suitable for axial plunging. Suitable for machining the narrow edge of painted or foil coated MDF.

HW, Z 2
WL 101 2

D mm	GL mm	NL mm	S mm	ID LH	ID RH
25	125	50	25x60	**040857** ●	**040858** ●
30	105	30	25x60		**040854** ●
30	125	50	25x60		**040853** ●

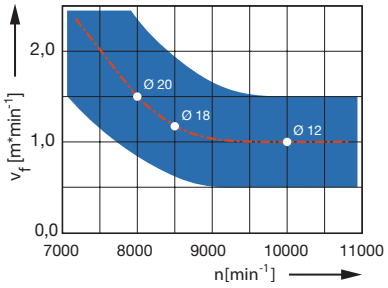
RPM: n = 14000 - 20000 min^{-1}

Spare knives:

BEZ	Knife	ABM mm	for D mm	QAL	VE PCS	ID
Turnblade knife	Plunging tip	7.6x12x1.5	25	HW-05F	10	**005080** ●
Turnblade knife	Plunging tip	12x12x1.5	30	HW-05F	10	**005081** ●
Turnblade knife	Peripheral tip	30x12x1.5	30	HW-05F	10	**005161** ●
Turnblade knife	Peripheral tip	50x12x1.5	25/30	HW-05F	10	**006506** ●

Spare parts:

BEZ	Knife	ABM mm	for D mm	ID
Oval head screw Torx® 15	Plunging tip Peripheral tip	M4x5	25/30 25	**007037** ●
Oval head screw Torx® 15	Peripheral tip	M4x5	30	**007038** ●
Torx® key		Torx® 15		**005457** ●



T-groove cutter

Application:
Router for slotting, grooving and undercutting

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Aluminium, aluminium extruded profiles, thermoplastics

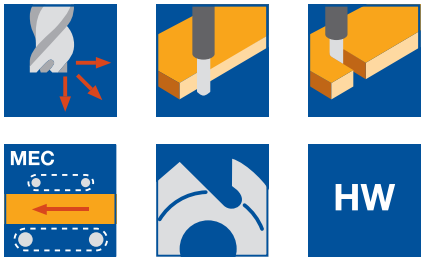
Technical information:
Long version for increased cross sections.

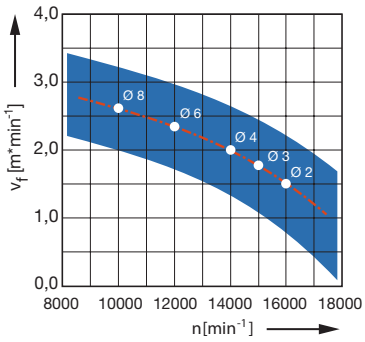
Disc cutter HW-solid, Z 4
WO 110 1

D mm	GL mm	AL mm	S mm	Z	SB mm	Twist	DRI	ID
12	80	45	8	4	0.8	RD	RH	**745064** ●
18	80	45	8	4	0.8	RD	RH	**745065** ●
20	80	45	8	4	0.8	RD	RH	**745066** ●

RPM: n = 8000 - 10000 min^{-1} V_f = 1,0 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Grooving cutter, serrated

Application:
Routers for sizing, grooving and pocket milling.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

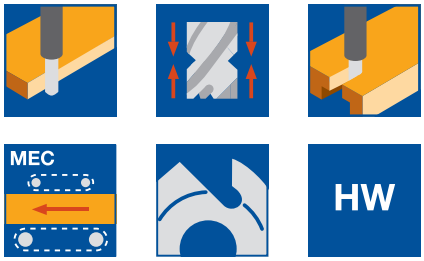
Workpiece material:
Glass and carbon fiber materials or other fiber reinforced materials, PU hard foams.

Technical information:
Multi-teeth geometry for universal application, minimisation of the force influences on the components, this avoids delamination and breakouts.

HW solid, Z 2
WO 110 1

D mm	GL mm	NL mm	S mm	ID
2	60	6	6	**745026** ●
3	40	12	6	**745022** ●
4	50	16	6	**745023** ●
6	60	19	6	**745024** ●
8	63	25	8	**745025** ●

RPM: n = 10000 - 16000 min^{-1} V_f = 1,5 - 2,0 m min^{-1}



Grooving cutter, serrated

Application:
Oberfräser zum Formatfräsen, Schlitzen, Trennen und delaminationsfreies Bearbeiten.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

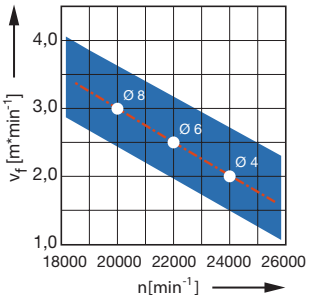
Workpiece material:
Carbon fiber materials with duroplastic binders (thickness 1,5 - 4 mm).

Technical information:
Special cutting edge geometry for delamination-free machining, no edge break-outs as well as high surface qualities due to alternating shear angle.

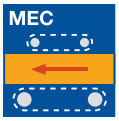
HW solid, Z2+2
WO 160 2 06

D	GL	NL	S	Z	DRI	ID
mm	mm	mm	mm			
4	60	14	6	2+2	RH	**745032** ●
6	60	15	6	2+2	RH	**745033** ●
8	63	16	8	2+2	RH	**745034** ●

RPM: n = 20000 - 24000 min^{-1} V_f = 2,0 - 3,0 m min^{-1}



● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW

Spiral roughing router cutter

Application:
Router cutter for sizing and grooving in roughing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, laminated wood for window construction, chipboard and fibre working materials (MDF, HDF etc.), uncoated, laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Solid tungsten carbide with chipbreakers for good chip removal. Long design for large cutting depths (recommended in serveral steps).

Z 3, long design, shank 32 mm
WO 160 2

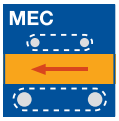
D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
40	283	200	32x65	3	RD	RH	**240531** ●

RPM: n_{max} = 12000 min^{-1}

Z 3, long design, shank 20 mm
WO 160 2

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
20	155	90	20x65	3	RD	RH	**240543** ●

RPM: n_{max} = 24000 min^{-1}



HW

Spiral roughing router cutter with extended gullet

Application:
Router cutter for sizing and grooving in roughing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, laminated wood for window construction, chipboard and fibre working materials (MDF, HDF etc.), uncoated, laminated veneer lumber (plywood, multiplex plywood etc.).

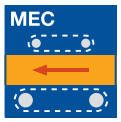
Technical information:
Solid tungsten carbide with chipbreakers and extended gullet for good chip removal. Extra long design for large cutting depths (recommended in serveral steps).

Z 3, extra long design, shank 16 mm
WO 160 2

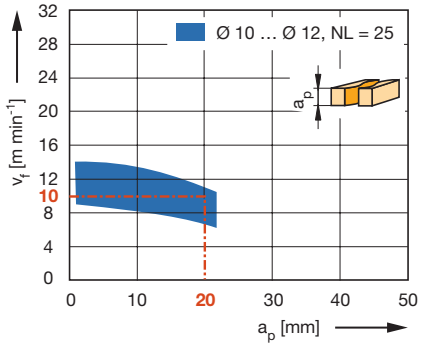
D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
25	180	25	16x70	3	RD	RH	**240544** ●

RPM: n_{max} = 18000 min^{-1}

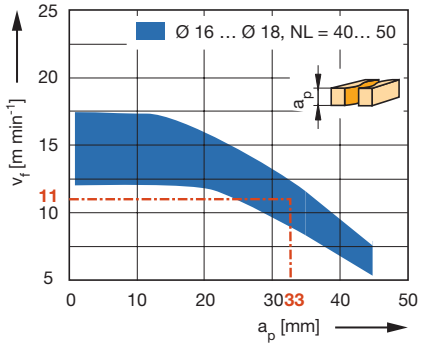
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.8; Chipboard = 1.3;
Glulam = 0.9



Workpiece material: Softwood
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.8; Chipboard = 1.2;
Glulam = 0.9

Spiral roughing/finishing router cutter Marathon

Application:
Router cutter for sizing and grooving in roughing/finishing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, laminated veneer lumber (plywood, multiplex plywood etc.), decorative laminates (HPL-compact laminate, Trespa etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.).

Technical information:
Solid tungsten carbide. Tungsten carbide grade and Marathon coating for increased performance time, particularly in abrasive materials. Recommended for abrasive materials such as HPL/CPL.

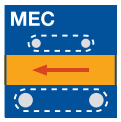
HW, Z 2, short design
WO 160 2 15

D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	Z	Twist	DRI	ID
12.7	1/2“	88.9	3 1/2“	38.1	1 1/2“	12.7x40	1/2“x1 1/2“	2	RD	RH	**240515** ●

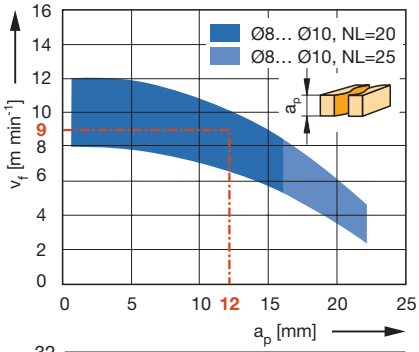
HW, Z 2, short design, for abrasive materials
WO 160 2 15

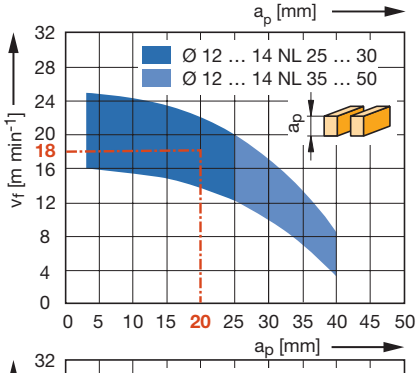
D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
10	70	25	10x40	2	RD	RH	**240200** ●
12	70	25	12x40	2	RD	RH	**240201** ●
16	100	40	16x50	2	RD	RH	**240202** ●

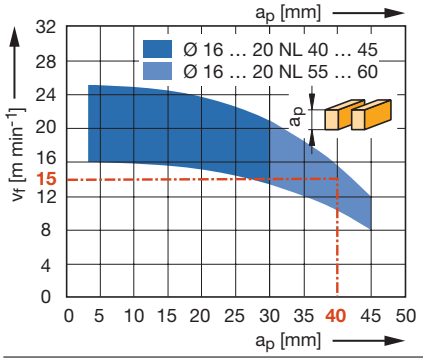
RPM: n_{max} = 24000 min^{-1}



Feed speed v_f depending on cutting depth a_p







Spiral roughing/finishing router cutter Marathon

Application:
Router cutter for sizing and grooving in roughing/finishing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, laminated wood for window construction, chipboard and fibre working materials (MDF, HDF etc.), uncoated, laminated veneer lumber (plywood, multiplex plywood etc.), plastomers, solid surface material (Corian, Varicor etc.), PVC window profiles.

Technical information:
Solid tungsten carbide. Marathon coating for increased performance time. Short design for increased stability. Long design for increased cutting depth (recommended in several steps). Higher feed speeds than conventional roughing cutters. Extremely smooth running.

Z 2 / Z 3, short design
WO 160 2 12

D mm	GL mm	NL mm	S mm	Z	Twist	ID LH	ID RH
8	65	20	8x40	2	RD		**042277** ●
10	70	25	10x40	2	RD		**042278** ●
10	70	25	10x40	2	LD		**042279** ●
12	70	25	12x40	3	RD		**042280** ●
12	70	25	12x40	3	LD		**042281** ●
14	80	30	14x45	3	RD		**042282** ●
16	100	40	16x55	3	RD		**042273** ●
16	100	40	16x55	3	LD	**042283** ●	**042284** ●
18	90	35	18x50	3	RD		**042285** ●
20	100	45	20x50	3	RD		**042286** ●
25	120	60	25x55	3	RD		**042287** ●

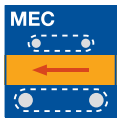
Z 2 / Z 3, long design
WO 160 2 12

D mm	GL mm	NL mm	S mm	Z	Twist	ID LH	ID RH
8	80	25	8x55	2	RD		**042288** ●
12	80	35	12x40	3	RD		**042270** ●
12	80	35	12x40	3	LD	**042289** ●	**042290** ●
12	90	42	12x40	3	RD		**042271** ●
14	110	50	14x55	3	RD		**042272** ●
14	110	50	14x55	3	LD		**042291** ●
16	110	55	16x55	3	RD		**042274** ●
16	110	55	16x55	3	LD	**042292** ●	**042293** ●
18	120	60	18x55	3	RD		**042294** ●
20	120	60	20x55	3	RD		**042275** ●
20	120	60	20x55	3	LD	**042295** ●	**042296** ●
20	130	75	20x50	3	RD		**042276** ●
20	130	75	20x50	3	LD	**042297** ●	

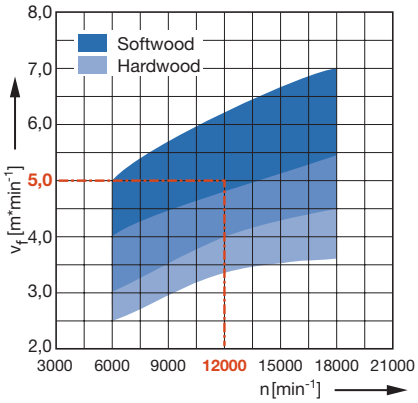
RPM:
Wood/wood derived material: n = 16000 - 24000 min^{-1}
Plastics: n = 12000 - 18000 min^{-1}
nmax = 24000 min-1

Workpiece material: Softwood
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.8; Chipboard = 1.3;
Glulam = 0.9

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Sizing
Axial infeed: a_p = 20 - 50 mm
Correction factor for v_f:
Hardwood = 0.7; Glulam = 0.8

Spiral roughing/finishing router cutter Marathon

Application:
Router cutter for sizing and grooving in roughing/finishing quality.

Machine:
Stationary routers with/without CNC control, machining centres, joinery machines, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, glulam, glue-laminated timber and laminated wood.

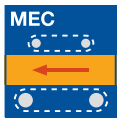
Technical information:
Solid tungsten carbide. Marathon coating for increased performance times. Long design for large cutting depths. Higher feed rates with conventional roughing cutters possible. Extremely smooth running.

Z 3, long design, shank 30 mm
WO 160 2 12

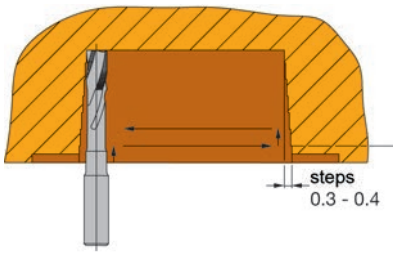
D	GL	NL	S	Z	Twist	DRI	ID
mm	mm	mm	mm				
30	195	120	30x53	3	RD	RH	**240305** ●
40	195	120	30x53	3	RD	RH	**240306** ●
40	235	160	30x53	3	RD	RH	**240307** ●

RPM: n = 6000 - 18000 min^{-1}

Note:
Tool shank S30x53 with recess suitable for many conventional joinery machines. Not suitable for use in shrink-fit chucks.
On machines with automatic tool changer use collet chuck ER 40 together with collet d = 30 mm, ID **679039**.



Application example for mortise slot production



Application data:
Infeed at:
a_p 4 - 8 mm per stroke in solid wood;
v_f 10 - 16 m min^{-1};
n = 12000 - 18000 min^{-1}

a_p 8 - 15 mm per stroke in chipboard;
v_f 12 - 18 m min^{-1};
n = 12000 - 18000 min^{-1}

Spiral roughing/finishing router cutter Marathon

Application:
Router cutter for sizing, grooving and mortise slots in roughing/finishing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, modified timber for window construction, chipboard and fibre working materials (MDF, HDF etc.) uncoated, laminated veneer lumber (plywood, multiplex plywood etc.), PVC window profiles.

Technical information:
Solid tungsten carbide. Marathon coating for increased performance time. Extra long design for increased cutting depth (in several steps). Higher feed speeds than conventional spiral roughing cutters, extremely smooth running.

Z 2 / Z 3, extra long design, for mortise slots
WO 160 2 13

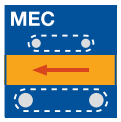
D mm	GL mm	NL mm	AL mm	S mm		Z	Twist	DRI	ID	ID Set HSK-F 63
8	80	25	51	8x25		2	LD	RH	**240010** ●	**240500** □
10	90	30	51	10x35		2	LD	RH	**240011** ●	**240501** □
12	120	35	80	12x35		3	LD	RH	**240012** ●	**240502** □
12	120	35	80	12x35		3	RD	RH	**240000** ●	
14	170	30	95	16x50		3	RD	RH	**240001** ●	
14	190	30	120	16x50		3	RD	RH	**240002** ●	
16	170	50	105	16x50		3	RD	RH	**240003** ●	
16	179	30	120	16x58	*	3	RD	RH	**240004** ●	
16	179	30	120	16x58		3	RD	RH	**240013** ●	
16	179	30	120	20x58	*	3	RD	RH	**240005** ●	
16	179	30	120	20x58		3	RD	RH	**240014** ●	
16	205	30	135	20x50		3	RD	RH	**240006** ●	
17	190	30	120	20x50		3	RD	RH	**240008** ●	
18	170	50	115	20x50		3	RD	RH	**240009** ●	

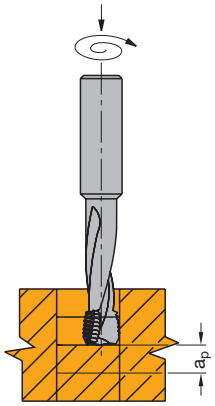
RPM: Wood/wood derived material: D 10-12 mm: n = 18000 - 24000 min^{-1}
Wood/wood derived materials: D 14-18 mm: n = 12000 - 20000 min^{-1}
Plastics: n = 12000 - 18000 min^{-1}

* with clamping flat for HOMAG/WEEKE lock case trimming unit

Note:
Set HSK-F 63 = tools marked with the note „Set HSK-F 63“ will be supplied mounted in shrink-fit chuck HSK-F 63.

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Production of keyholes and spyholes by circular cutting

Application data:
a_p 4 - 8 mm per stroke in solid wood;
v_f 10 - 16 m min^{-1};
n = 12000 - 18000 min

a_p 8 - 15 mm per stroke in chipboard;
v_f 12 - 18 m min^{-1};
n = 12000 - 18000 min^{-1}

Spiral roughing/finishing router cutter Marathon

Application:
Router cutter for sizing and cutting spyholes and keyholes in roughing/finishing quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, modified timber for window construction, chipboard and fibre working materials (MDF, HDF etc.) uncoated, laminated veneer lumber (plywood, multiplex plywood etc.).

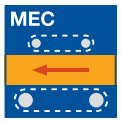
Technical information:
Solid tungsten carbide. Marathon coating for increased performance time. Extra long design for increased cutting depth (in several steps). Higher feed speeds than conventional spiral roughing cutters, extremely smooth running.

Z 3, extra long design for cutting spyholes and keyholes
WO 160 2 14

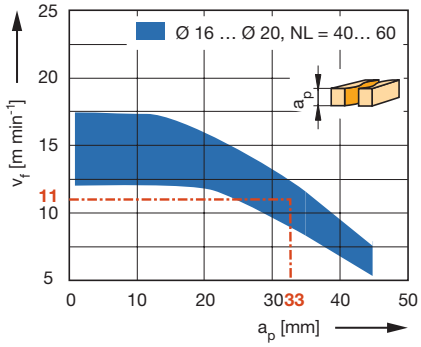
D mm	GL mm	NL mm	AL mm	S mm	Z	DRI	ID	ID Set HSK-F 63
10	95	45		10x40	3	RH	**240100** ●	
12	120	15	75	12x40	2	RH	**240102** ●	
12	140	20	95	12x40	2	RH	**240103** ●	
14	130	50	75	14x50	3	RH	**240104** ●	
14	170	30	95	16x60	3	RH	**240108** ●	**240601** □
16	130	75		16x50	3	RH	**240105** ●	
16	170	50	105	16x55	3	RH	**240107** ●	**240600** □
16	170	30	95	16x60	3	RH	**240106** ●	
25	200	120		25x65	3	RH	**240300** ●	**240800** □

RPM: D 10-12 mm: n = 18000 - 24000 min^{-1}
D 14-18 mm: n = 12000 - 20000 min^{-1}

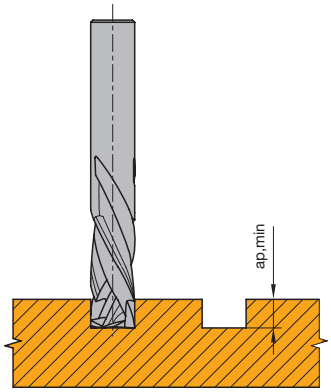
Note:
Set HSK-F 63 = tools marked with the note „Set HSK-F 63“ will be supplied mounted in shrink-fit chuck HSK-F 63.



Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.8; Chipboard = 1.2;
Glulam = 0.9



Minimum grooving depth $a_{p\ min}$ for tear-free cut

Spiral roughing/finishing router cutter Marathon alternate twist

Application:
Routers for sizing and grooving in roughing/finishing quality and tear-free cutting edges on both sides.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, laminated veneer lumber (plywood, multiplex plywood etc.), plastomers, solid surface material (Corian, Varicor etc.).

Technical information:
Solid tungsten carbide. Marathon coating for increased performance time. Alternate twist for tear-free cut edges on both sides. Higher feed speeds possible than with conventional roughing cutters. Extremely smooth running.

Z 2+2
WO 160 2 16

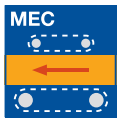
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
16	100	40	16x50	15	RH	**240402** ●
16	110	55	16x50	15	RH	**240408** ●
20	120	45	20x50	19	RH	**240400** ●
20	140	75	20x50	19	RH	**240403** ●

Z 2+2, Nesting types
WO 160 2 16

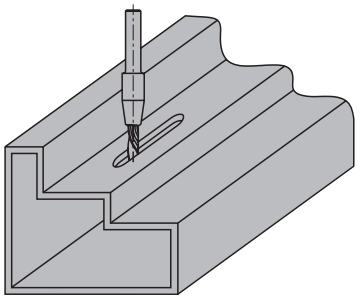
D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
12		80		25		12x40		6	RH	**240404** ●
12		90		35		12x40		13	RH	**240405** ●
12.7	1/2“	76.2	3“	25	1“	12,7x40	1/2“x1 1/2“	6	RH	**240406** ●
12.7	1/2“	88.9	3 1/2“	35	1 3/8“	12,7x40	1/2“x1 1/2“	15	RH	**240407** ●

RPM: n_{max} = 24000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW



Slotting extrusions

Spiral finishing router cutter

Application:
Router for grooving plastic and aluminium profile extrusions. Especially to produce drainage grooves in plastic window profiles.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, duromers, plastomers, sandwich panels (PU foam cores with aluminium covers etc.), NF-metals (aluminium, copper etc.).

Technical information:
When cutting aluminium, suitable lubrication (spray or minimum volume lubrication) is necessary.

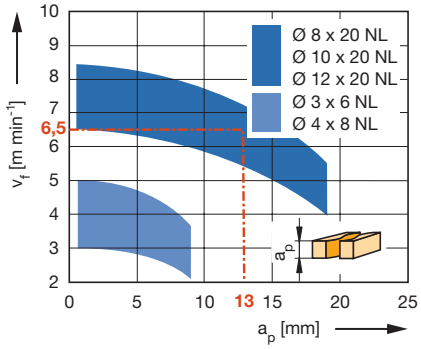
HW solid, Z 1, extended version
WO 160 2 07

D	GL	NL	AL	S	Z	Twist	DRI	ID
mm	mm	mm	mm	mm				
5	78	20	30	8x40	1	RD	RH	**042539** ●
5	95	20	30	8x40	1	RD	RH	**042540** ●
5	110	25	45	8x40	1	RD	RH	**042541** ●

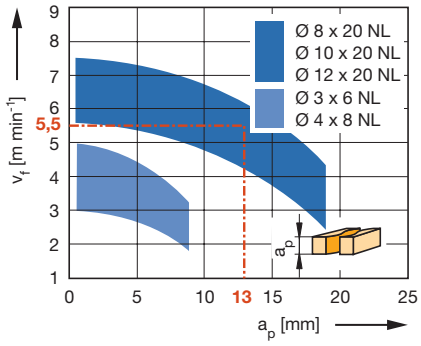
RPM: n = 18000 - 24000 min^{-1}


HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Sizing
Speed: n = 18000 - 24000 min^{-1}
Correction factor for v_f:
Hardwood = 0.9;
Machining across grain = 0.8;
Chipboard = 1.1



Spiral finishing router cutter

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.), NF-metals (aluminium, copper etc.).

Technical information:
Large twist angle for high shear cut. Check twist direction for good top layer cut quality. Maximum cutting depth 1.0 - 1.5 x D. Short design for increased stability and reduced vibration. Long design for increased cutting depth (recommended in several steps).

HW solid, Z 1, short design
WO 160 2 03

D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	Z	Twist	DRI	ID
3		50		6		6x30		1	RD	RH	**042723** ●
3		50		6		6x30		1	LD	RH	**042724** ●
4		50		8		6x30		1	RD	RH	**042725** ●
4		50		8		6x30		1	LD	RH	**042726** ●
5		50		10		6x30		1	RD	RH	**042727** ●
5		50		10		6x30		1	LD	RH	**042728** ●
6		50		14		6x30		1	RD	RH	**042729** ●
6		50		14		6x30		1	LD	RH	**042730** ●
6.35	1/4“	50.8	2“	15.88	5/8“	6.35x30	1/4“x1 1/8“	1	RD	RH	**240512** ●
8		65		20		8x40		1	RD	RH	**042731** ●
8		65		20		8x40		1	LD	RH	**042732** ●
10		70		20		10x40		1	RD	RH	**042733** ●

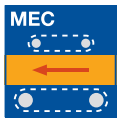
HW solid, Z 1, long design
WO 160 2 03

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
4	60	12	6x40	1	RD	RH	**042739** ●
4	60	12	6x40	1	LD	RH	**042740** ●
5	80	18	6x40	1	RD	RH	**042741** ●
5	80	18	6x40	1	LD	RH	**042742** ●
6	80	22	6x40	1	RD	RH	**042743** ●
6	80	22	6x40	1	LD	RH	**042744** ●
8	80	25	8x40	1	RD	RH	**042745** ●
8	80	25	8x40	1	LD	RH	**042746** ●
10	90	32	10x40	1	RD	RH	**042747** ●
10	90	32	10x40	1	LD	RH	**042748** ●
12	90	32	12x40	1	RD	RH	**042749** ●

RPM: Wood/wood derived material: n = 16000 - 24000 min^{-1}
Plastics: n = 12000 - 18000 min^{-1}

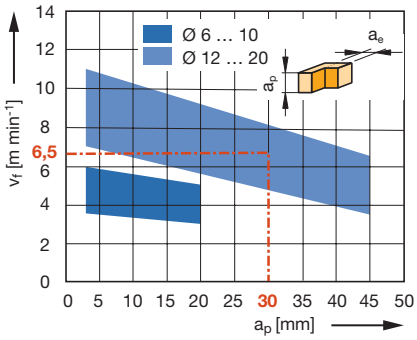
Workpiece material: Duromers, plastomers, glulam (HPL), compound materials
Operation: Sizing
Speed: n = 16000 - 18000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Jointing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.9;
Machining across grain = 0.7

Spiral finishing router cutter

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Ideally used after roughing cutters, finish cut allowance approx. 1-2 mm. Check twist direction for good top layer quality. Short design for increased stability and low vibration. Long design for larger material thickness at reduced feed speeds.

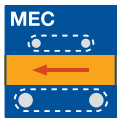
HW solid, Z 2, short design
WO 160 2 05

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
6	60	12	6x30	2	LD	RH	**042457** ●
8	65	20	8x30	2	RD	RH	**042472** ●
10	70	25	10x40	2	RD	RH	**042458** ●
10	70	25	10x40	2	LD	RH	**042459** ●
12	70	25	12x40	2	RD	RH	**042758** ●
12	70	25	12x40	2	LD	RH	**042760** ●
16	100	40	16x50	2	RD	RH	**042761** ●
16	100	40	16x50	2	LD	RH	**042763** ●

HW solid, Z 2, long design
WO 160 2 05

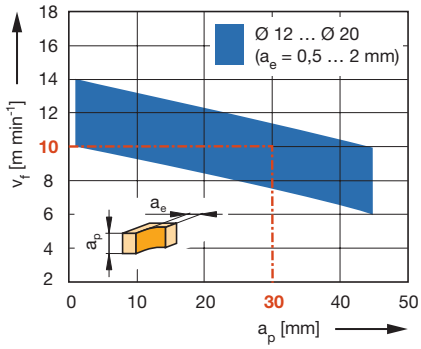
D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	Z	Twist	DRI	ID
12		80		35		12x40		2	RD	RH	**042765** ●
12.7	1/2“	76.2	3“	31.8	1 1/4“	12.7x40	1/2“x1 1/2“	2	LD	RH	**240510** ●
12.7	1/2“	88.9	3 1/2“	31.8	1 1/4“	12.7x40	1/2“x1 1/2“	2	LD	RH	**240511** ●

RPM: n = 16000 - 24000 min^{-1}

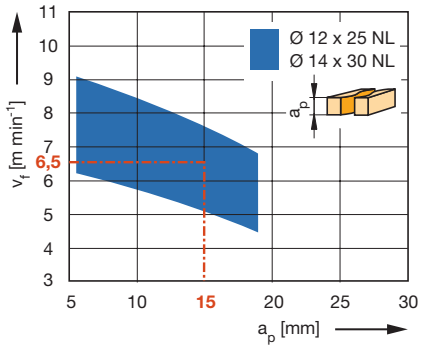


HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Jointing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.9;
Machining across grain = 0.7



Workpiece material: Duromers, laminated materials (HPL, CPL)
Operation: Sizing
Speed: n = 14000 - 18000 min^{-1}

Spiral finishing router cutter

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality. Z 3 design for high feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Ideally used after roughing cutters, finish cut allowance approx. 1-2 mm. Check twist direction for good top layer quality. Short design for increased stability and low vibration. Long design for larger material thickness at reduced feed speeds.

HW solid, Z 3, short design
WO 160 2 05

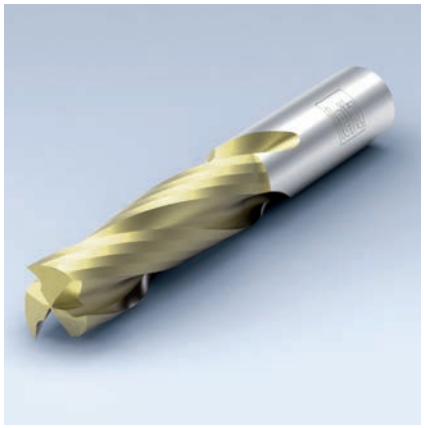
D mm	GL mm	NL mm	S mm	Z	Twist	ID LH	ID RH
12	70	25	12x40	3	LD		**042486** ●
12	70	25	12x40	3	RD	**042534** ●	**042487** ●
16	100	40	16x50	3	RD		**042488** ●
16	100	40	16x50	3	LD		**042489** ●

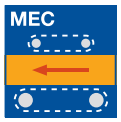
HW solid, Z 3, long design
WO 160 2 05

D mm	GL mm	NL mm	S mm	Z	Twist	ID LH	ID RH
8	65	25	8x30	3	LD		**042490** ●
12	80	35	12x40	3	RD		**042460** ●
14	110	50	14x55	3	RD		**042462** ●
16	110	55	16x55	3	RD		**042464** ●
16	110	55	16x55	3	LD	**042473** ●	**042465** ●
20	120	60	20x55	3	RD		**042466** ●
20	120	60	20x55	3	LD	**042468** ●	**042467** ●
20	130	75	20x50	3	RD		**042549** ●

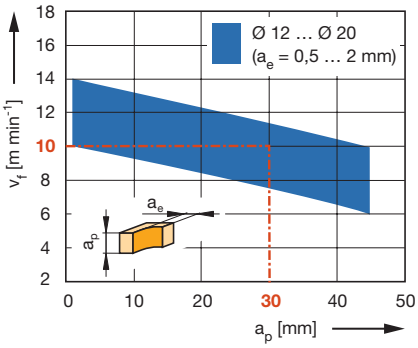
RPM: n = 16000 - 24000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Jointing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.9;
Machining across grain = 0.7

Spiral finishing router cutter Marathon

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality. Z 3 design for high feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

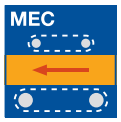
Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Marathon coating for increased performance time and reduced resin build up. Ideally used after roughing cutters, finish cut allowance approx. 1-2 mm. Mirror finished cutting area ideal for machining thermoplastics.

HW solid, Z 3
WO 160 2 10

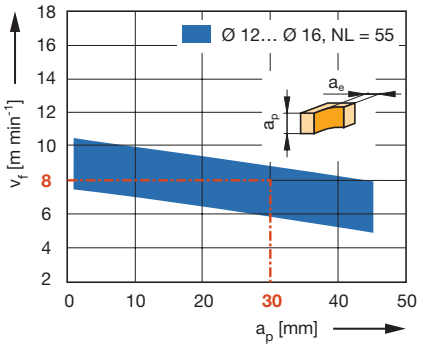
D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
12	80	35	12x40	3	RD	RH	**042790** ●
14	110	50	14x55	3	RD	RH	**042791** ●
16	110	55	16x55	3	RD	RH	**042792** ●
20	120	60	20x55	3	RD	RH	**042793** ●
20	130	75	20x50	3	RD	RH	**042794** ●

RPM: n = 16000 - 24000 min^{-1}



HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Softwood
Operation: Jointing
Speed: n = 18000 min^{-1}
Correction factor for v_f:
Hardwood = 0.9;
Machining across grain = 0.7

Spiral finishing router cutter alternate twist angle

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality and tear-free cut edges on both sides.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

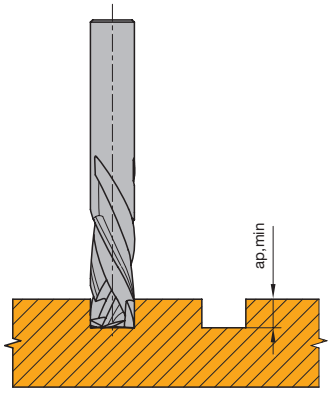
Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Ideally used after roughing cutters, finish cut allowance approx. 1-2 mm. Alternate twist for tear-free cut edges on both sides. Z 1+1 design, suited for solid wood up to 50 mm thickness with roughing cut or 30 mm thickness without roughing cut.

HW solid, Z 1+1
WO 160 2 06

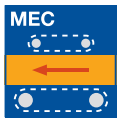
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
10	70	25	10x40	12	RH	**042511** ●
12	80	35	12x40	16	RH	**042509** ●
16	110	55	16x50	20	RH	**042543** ●

RPM: n = 16000 - 20000 min^{-1}



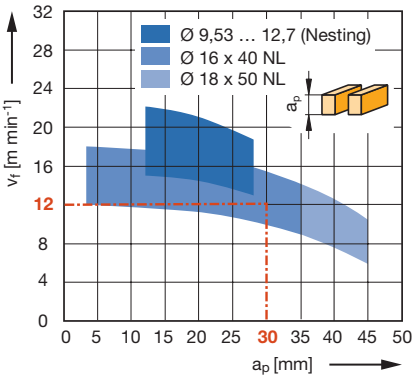
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated and veneered chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor v_f: MDF = 0.8; Machining across grain = 0.7

Spiral finishing router cutter alternate twist angle

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality and tear-free cut edges on both sides.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

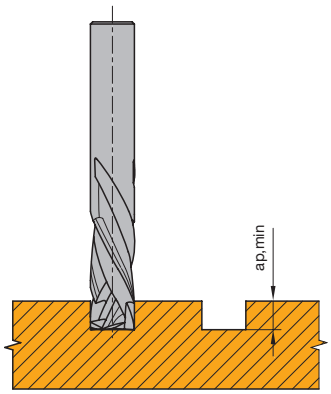
Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Ideally used after roughing cutters, finish cut allowance approx. 1-2 mm. Alternate twist for tear-free cut edges on both sides. Design for coated chipboard material and fibre material, glulam, abrasive materials and compound materials with aluminium top layer.

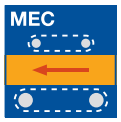
HW solid, Z 2+2, for abrasive materials
WO 160 2 06

D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
12		70		25		12x40		13	RH	**042536** ●
16		100		40		16x50		15	RH	**042537** ●
18		100		50		18x50		20	RH	**042538** ●
9.53	3/8“	76.2	3“	28.6	1 1/8“	9,53x40	3/8“x1 1/2“	7	RH	**240516** ●
12.7	1/2“	88.7	3 1/2“	38.1	1 1/2“	12,7x40	1/2“x1 1/2“	13	RH	**240517** ●

RPM: n = 16000 - 24000 min^{-1}

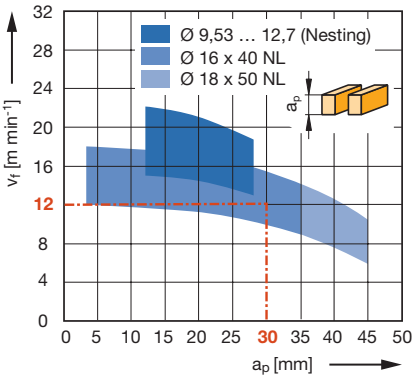


Minimum grooving depth $a_{p\ min}$ for tear-free cut

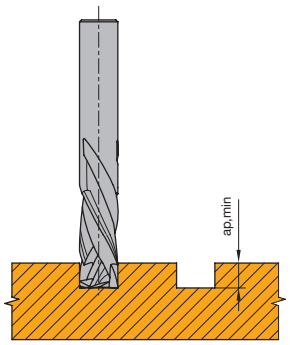


HW

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated and veneered chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor v_f: MDF = 0.8; Machining across grain = 0.7



Minimum grooving depth $a_{p\ min}$ for tear-free cut

Spiral finishing router cutter alternate twist angle

Application:
Router cutter for sizing, grooving and finish cutting. For high demands on finish quality and tear-free cut edges on both sides.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.), decorative laminates (HPL-compact laminate, Trespa etc.).

Technical information:
Alternate twist for tear-free cutting edges on both sides. Especially suitable to cut coated chip and fibre boards, glulam, abrasive materials as well as composite materials with aluminium top layer.

HW solid, Z 2+2, Nesting types
WO 160 2 06

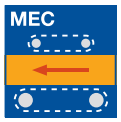
D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
9.53	3/8“	76.2	3“	23	7/8“	9.53x40	3/8“x1 1/2“	5.5	RH	**240518** ●
9.53	3/8“	76.2	3“	28.6	1 1/8“	9.53x40	3/8“x1 1/2“	7	RH	**240503** ●
10		75		28		10x40		8	RH	**240530** ●
12.7	1/2“	76.2	3“	32	1 1/4“	12.7x40	1/2“x1 1/2“	5	RH	**240504** ●
12.7	1/2“	76.2	3“	32	1 1/4“	12.7x40	1/2“x1 1/2“	6	RH	**240505** ●
12.7	1/2“	88.9	3 1/2“	34.9	1 3/8“	12.7x40	1/2“x1 1/2“	6	RH	**240506** ●
12.7	1/2“	101.6	4“	43	1 5/8“	12.7x40	3/8“x1 5/8“	20	RH	**240507** ●

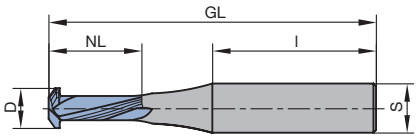
HW solid, Z 3+3, Nesting types
WO 160 2 06

D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
9.53	3/8“	76.2	3“	23	7/8“	9.53x40	3/8“x1 1/2“	6	RH	**240508** ●
10		70		24		10x40		8	RH	**042797** ●

RPM: n = 16000 - 24000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Recommendation for application:
RPM:
n = 18000 - 24000 min^{-1}
Feed rate:
v_f = 6 - 8 m min^{-1} chipboard/MDF
v_f = 4 - 6 m min^{-1} solid wood/plywood

Grooving cutter Lamello® Clamex® P-System®

Application:
Router cutter for machining a profile slot for Lamello® Clamex® P-System® connectors.

Machine:
Stationary routers with CNC control, machining centres, especially machines with 5 axes technology or with comparable aggregates to swivel cutting tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., softwood and hardwood, glued wood and laminated veneer lumber (plywood, multiplex plywood etc.).

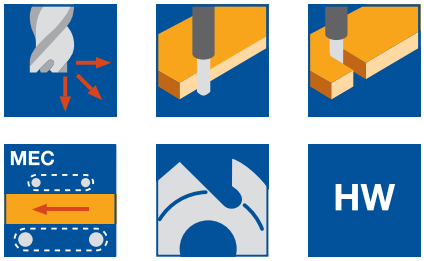
Technical information:
Solid tungsten carbide. Marathon-TDC coating for increased performance times. Alternate twist for tear-free cutting edges.

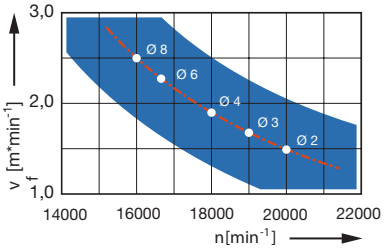
Z 2+2
WO 531 2

D mm	GL mm	NL mm	S mm	DRI	ID
9.8	80	23	12x40	RH	**039161** ●

RPM: n_{max} = 24000 min^{-1}

Boring bit for boring an access hole D = 6 mm: ID **034116.**
Grooving cutter for CNC: ID **090018**.





Spiral finishing router cutter

Application:
Router for sizing, grooving, sloting, splitting and axial plunging.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Aluminium, aluminium extruded profiles, aluminium composite panels.

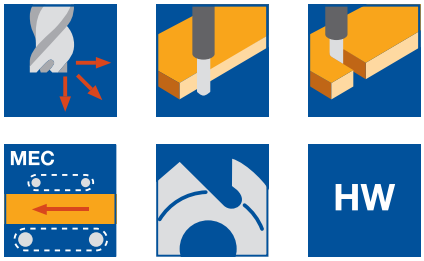
Technical information:
Special cutting geometry for high finish quality and burr-free cutting edges. Short processing times with long tool life.

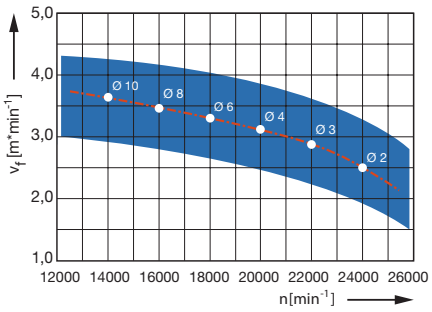
HW solid, Z 1, polished cutting groove, axial plunging
WO 160 2 03

D mm	GL mm	NL mm	S mm	Z	ER mm	Twist	DRI	ID
2	50	6	6	1	0.1	RD	RH	**745067** ●
3	50	8	6	1	0.1	RD	RH	**745068** ●
4	50	5	6	1	0.1	RD	RH	**745069** ●
6	60	12	6	1	0.1	RD	RH	**745070** ●
8	63	20	8	1	0.1	RD	RH	**745071** ●

RPM: n = 16000 - 22000 min^{-1} V_f = 2,0 - 2,5 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Spiral finishing router cutter

Application:
Router for sizing, grooving, pocket cutting and ramping.

Machine:
Routing machines with/without CNC control, CNC machining centres, special milling machines with spindles to adapt shank tools.

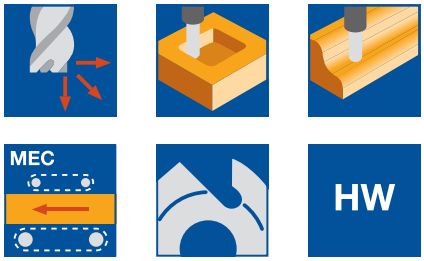
Workpiece material:
Transparent plastics such as PMMA and PC.

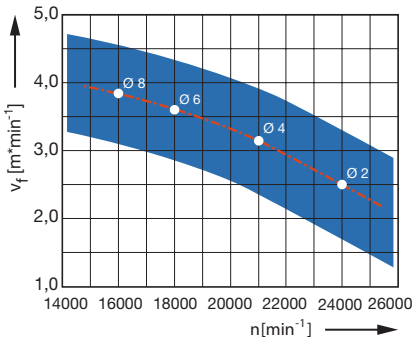
Technical information:
For roughing and finishing of PMMA and similar materials for cutting edges as clear as possible, without subsequent polishing.

HW-solid, Z 1, polished cutting groove, ramping
WO 160 2 03

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
2	50	11	6	1	RD	RH	**745007** ●
3	50	11	6	1	RD	RH	**745008** ●
4	60	17	6	1	RD	RH	**745009** ●
6	50	12	6	1	RD	RH	**745010** ●
8	60	22	8	1	RD	RH	**745011** ●
10	75	22	10	1	RD	RH	**745006** ●

RPM: n= 14000 - 24000 min^{-1} V_f = 2,5 - 3,6 m min^{-1}





Spiral finishing router cutter

Application:
Router for contour milling.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Transparent plastics such as PMMA and PC.

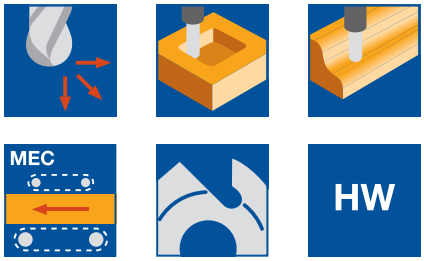
Technical information:
For roughing and finishing of PMMA and similar materials for cutting edges as clear as possible.

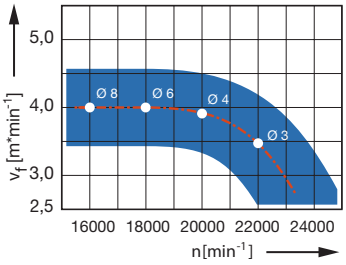
HW-solid, Z 1, with radius, polished cutting groove
WO 160 2 03

D mm	GL mm	NL mm	AL mm	S mm	Z	R mm	Twist	DRI	ID
2	60	10	10	6	1	1	RD	RH	**745012** ●
4	60	15	15	6	1	2	RD	RH	**745013** ●
6	60	20	20	6	1	3	RD	RH	**745014** ●
8	90	20	60	8	1	4	RD	RH	**745015** ●

RPM: n = 16000 - 24000 min^{-1} V_f = 2,5 - 3,4 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Spiral finishing router cutter

Application:
Router for contour milling.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Transparent plastics such as PMMA and PC, PUR block material.

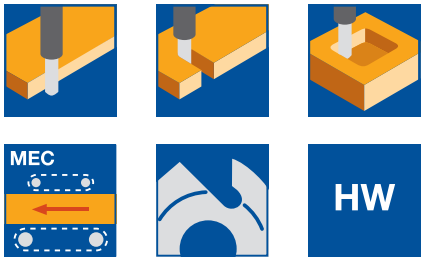
Technical information:
For roughing and finishing of PMMA and similar materials for cutting edges as clear as possible.

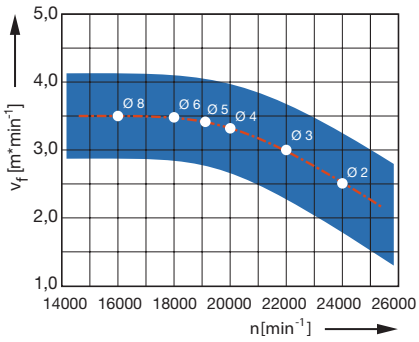
HW-solid, Z 2, with radius, polished cutting groove
WO 160 2 05

D mm	GL mm	NL mm	AL mm	S mm	Z	R mm	Twist	DRI	ID
3	75	12	25	6	2	1.5	RD	RH	**745048** ●
4	60	5	15	6	2	2	RD	RH	**745049** ●
6	60	10	30	6	2	3	RD	RH	**745050** ●
8	63	7	30	8	2	4	RD	RH	**745051** ●

RPM: n = 16000 - 22000 min^{-1} V_f = 3,4 - 4,0 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Spiral finishing router cutter

Application:
Router for sizing, grooving and pocket milling.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Thermoplastics, PVC window profiles.

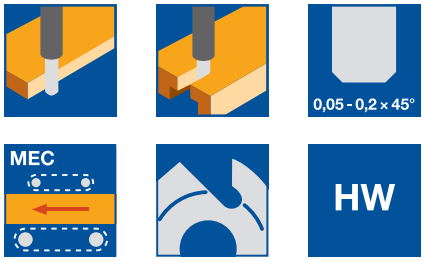
Technical information:
Universally applicable for good cutting results in sizing.

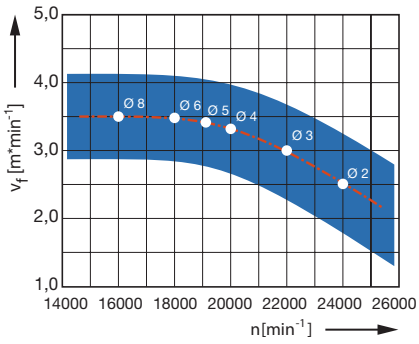
HW-solid, Z 1, righthand twist
WO 160 2 03

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
2	60	8	6	1	RD	RH	**745016** ●
3	75	15	6	1	RD	RH	**745017** ●
4	60	12	6	1	RD	RH	**745018** ●
5	60	14	6	1	RD	RH	**745019** ●
6	60	16	6	1	RD	RH	**745020** ●
8	75	30	8	1	RD	RH	**745021** ●

RPM: n = 16000 - 24000 min^{-1} V_f = 2,5 - 3,4 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Spiral finishing router cutter

Application:
Router for sizing, slotting and splitting.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

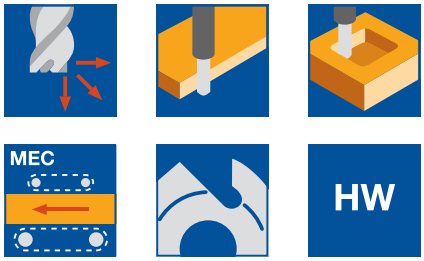
Workpiece material:
Thermoplastics, PVC window profiles.

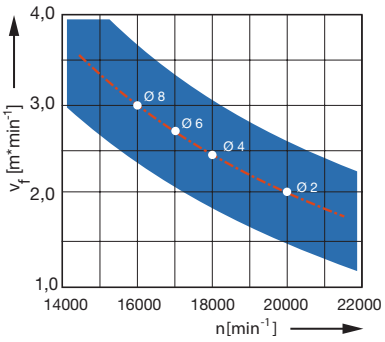
Technical information:
Universally applicable for good cutting results in sizing. Lefthand twist for perfect cutting edge.

HW-solid, Z 1, lefthand twist
WO 160 2 03

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
2	60	8	6	1	LD	RH	**745000** ●
3	60	10	6	1	LD	RH	**745001** ●
4	60	25	6	1	LD	RH	**745002** ●
5	75	22	8	1	LD	RH	**745003** ●
6	75	25	8	1	LD	RH	**745004** ●
8	75	30	8	1	LD	RH	**745005** ●

RPM: n = 16000 - 24000 min^{-1} V_f = 2,5 - 3,4 m min^{-1}





Spiral finishing router cutter

Application:
Router for sizing, grooving, pocket milling, slotting, splitting and axial plunging.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Aluminium, aluminium extruded profiles, aluminium composite panels.

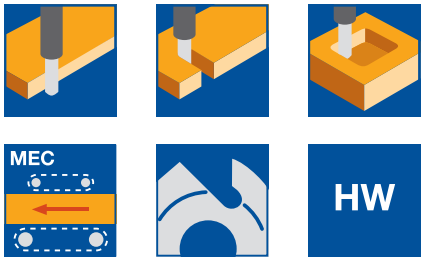
Technical information:
Special cutting geometry for high surface qualities and burr-free cutting edges. Short machining times with long tool life.

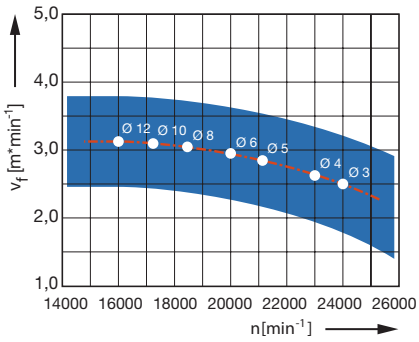
HW-solid, Z 2, polished cutting groove
WO 160 2 05

D mm	GL mm	NL mm	S mm	Z	ER mm	Twist	DRI	ID
2	50	6	6	2	0.1	RD	RH	**745060** ●
4	50	10	6	2	0.1	RD	RH	**745061** ●
6	60	20	6	2	0.1	RD	RH	**745062** ●
8	75	25	8	2	0.1	RD	RH	**745063** ●

RPM: n = 16000 - 20000 min^{-1} V_f = 2,0 - 3,0 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Spiral finishing router cutter

Application:
Router for sizing, pocket milling and grooving.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

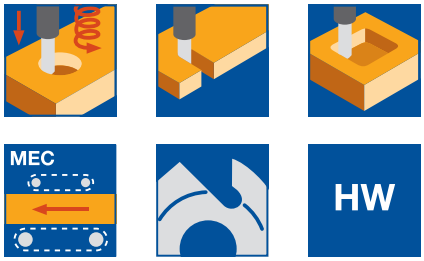
Workpiece material:
Foams, particularly PE and foamed PU.

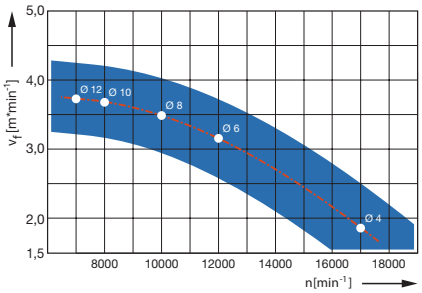
Technical information:
Special design for pointed corners. Spiral at an angle of 14°, defind edge radius. Processing of vertical edges without lint and fibres.

HW-solid, Z 3, polished cutting groove
WO 160 2 05

D	GL	NL	AL	S	Z	ER	Twist	DRI	ID
mm	mm	mm	mm	mm		mm			
3	75	15	40	3	3	0.2	RD	RH	**745037** ●
4	75	15	40	4	3	0.2	RD	RH	**745038** ●
5	100	20	65	6	3		RD	RH	**745039** ●
6	100	42	75	6	3		RD	RH	**745040** ●
8	100	40	75	8	3		RD	RH	**745041** ●
10	120	50	85	10	3		RD	RH	**745035** ●
12	125	50	90	12	3	0.2	RD	RH	**745036** ●

RPM: n = 16000 - 24000 min^{-1} V_f = 2,5 - 3,0 m min^{-1}





Spiral finishing router cutter

Application:
Router for sizing, grooving, ramping and pocket milling.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Carbon fiber materials.

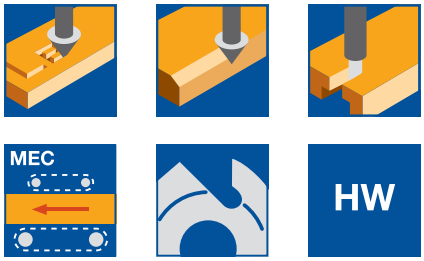
Technical information:
Special cutting geometry with chip breaker pitch, for high smooth running.
Face-cutting. Large gullet areas for high cutting volume.

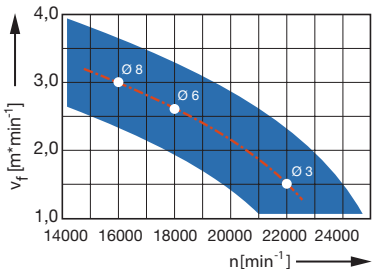
HW-solid, Z 9
WO 160 2 05

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
4	60	10	6	9	RD	RH	**745029** ●
6	60	15	6	9	RD	RH	**745030** ●
8	63	19	8	9	RD	RH	**745031** ●
10	72	22	10	9	RD	RH	**745027** ●
12	83	26	12	9	RD	RH	**745028** ●

RPM: n = 8000 - 14000 min^{-1} V_f = 3,0 - 3,5 m min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





V groove spiral finishing router cutter

Application:
Router for engraving, bevelling and splitting.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

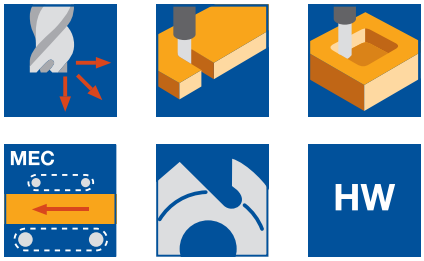
Workpiece material:
Aluminium, aluminium-compound panels, PMMA, thermoplastics

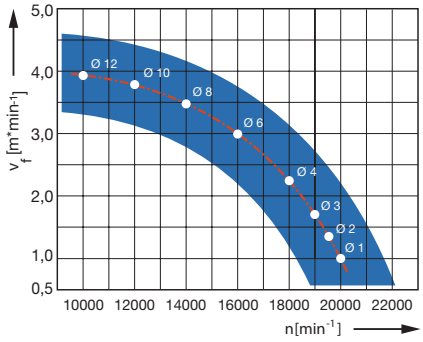
Technical information:
Special cutting edge geometry for versatile use such as marking, bevelling or profile cutting, in 60° and 90° point angle.

HW-solid, Z 1, polished cutting groove
WO 160 2 03

D	GL	NL	S	Z	R	FAW	Twist	DRI	ID
mm	mm	mm	mm		mm	°			
3	50	8	6	1	0.1	60	RD	RH	**745042** ●
3	50	8	6	1	0.1	90	RD	RH	**745043** ●
6	60	12	6	1	0.1	60	RD	RH	**745044** ●
6	60	12	6	1	0.1	90	RD	RH	**745045** ●
8	63	15	8	1	0.2	60	RD	RH	**745046** ●
8	63	15	8	1	0.2	90	RD	RH	**745047** ●

RPM: n = 16000 - 22000 min^{-1} V_f = 2,0 - 2,5 m min^{-1}





Torus spiral finishing router cutter

Application:
Router for sizing, grooving, slotting, splitting.

Machine:
Routing machines with/without CNC conrol. CNC machining centres, special milling machines with cutting spindles to adapt shank tools.

Workpiece material:
Aluminium, aluminium-compound panels, PUR block material, thermoplastics, duroplastics.

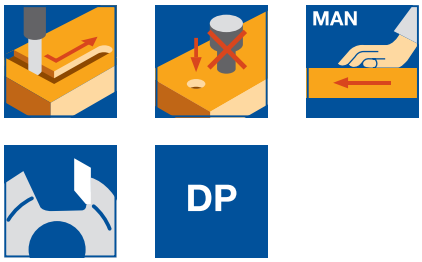
Technical information:
Special cutting geometry for high finish quality and burr-free cutting edges. Exposure for large processing depths.

HW-solid, Z 2, polished cutting groove
WO 160 2 05

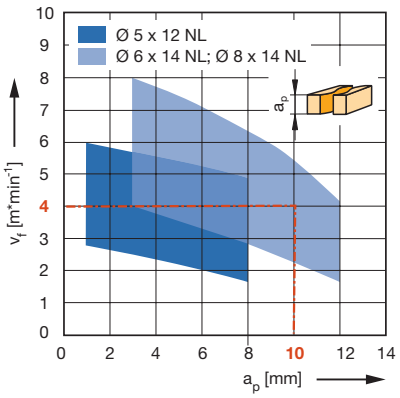
D	GL	NL	AL	S	Z	ER	Twist	DRI	ID
mm	mm	mm	mm	mm		mm			
1	40	5	5	3	2	0.1	RD	RH	**745052** ●
2	50	10	10	6	2	0.5	RD	RH	**745055** ●
3	50	8	8	6	2	0.2	RD	RH	**745056** ●
4	50	14	14	6	2	0.2	RD	RH	**745057** ●
6	60	20	20	6	2	0.2	RD	RH	**745058** ●
8	63	25	25	8	2	0.2	RD	RH	**745059** ●
10	100	35	35	10	2	0.5	RD	RH	**745053** ●
12	100	16	50	12	2	0.5	RD	RH	**745054** ●

RPM: n = 8000 - 24000 min^{-1} V_f = 1,0 - 4,0 m min^{-1}

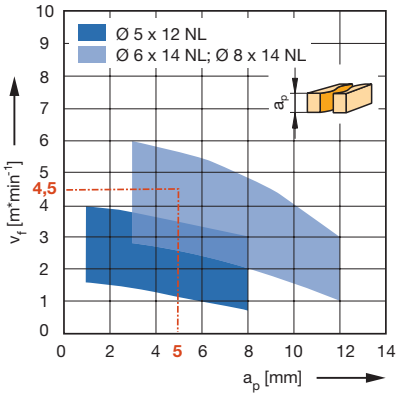
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
RPM: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; uncoated chipboard = 1.1



Router cutter Diamaster PRO

Application:
Router for sizing and grooving with continuous cutting edge.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., duromers, plastomers, laminated materials (HPL-compact laminate, Trespa, multiplex plywood), NF-metals.

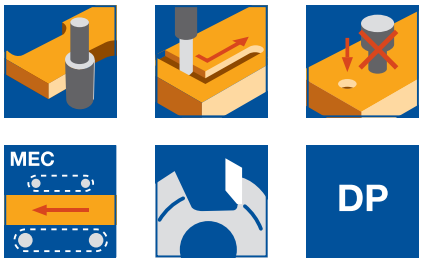
Technical information:
Solid tungsten carbide tool body for increased stability and smooth running. DP face edge suitable for plunging. Slightly positive shear angle for improved chip removal when ramp plunging. Axial infeed for grooving and sizing maximum 1.0 - 1.5 x D. Resharpenable up to 3 times with normal wear.

DP, Z 1
WO 120 2 50

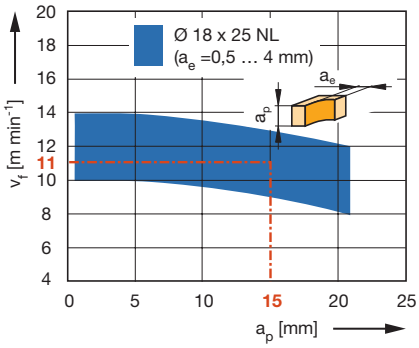
D mm	GL mm	NL mm	S mm	Z	DRI	ID
5	60	12	8x35	1	RH	**191086** ●
6	60	14	8x35	1	RH	**191087** ●
8	55	10	8x35	1 (0°)	RH	**191107** ●
8	60	14	8x35	1	RH	**191088** ●

RPM: n = 18000 - 24000 min^{-1}

Workpiece material: Thermoplastics, compound materials
Operation: Sizing
RPM: n = 18000 min^{-1}



Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Jointing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.9; Veneer across grain = 0.7

Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving with continuous cutting edge. Particularly suitable for machining MDF with direct lacquering or foil coating of the machined edges.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., duromers, plastomers, laminated materials (HPL-compact laminate, Trespa, multiplex plywood).

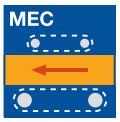
Technical information:
Negative shear angle (only for ID **091158**) for tear-free edges during grooving and to support the workpiece clamping of smaller parts. Resharpenable 3 to 5 times with normal wear. Maximum chip removal 4 mm; roughing cut required for higher chip removal.

DP, Z 2
WO 140 2 50

D	GL	NL	S	Z	DRI	ID
mm	mm	mm	mm			
10	70	12	12x40	2	RH	**091158** ●
18	90	25	16x50	2	RH	**091190** ●

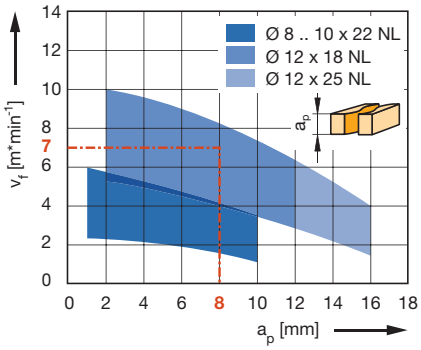
RPM: n = 16000 - 24000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
RPM: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; Uncoated chipboard = 1.1

Router cutter Diamaster PRO

Application:
Router for sizing and grooving with continuous cutting edge.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

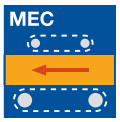
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., duromers, plastomers, laminated materials (HPL-compact laminate, Trespa, multiplex plywood), NF-metals.

Technical information:
Solid tungsten carbide tool body for increased stability and smooth running. DP face edge suitable for ramp plunging. Slightly positive shear angle for improved chip removal when plunging. From D = 12 mm on with full size DP plunging edge. Axial infeed for grooving and sizing maximum 1.0 - 1.5 x D. Resharpenable 2 to 3 times with normal wear.

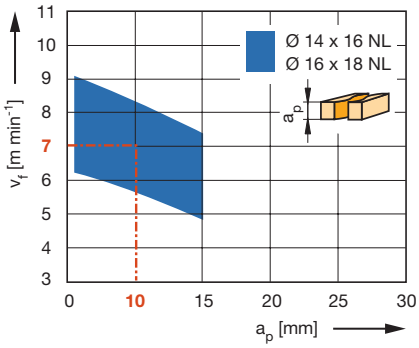
DP, Z 2
WO 120 2 50

D mm	GL mm	NL mm	S mm	Z	DRI	ID
8	65	15	12x35	2	RH	**191108** ●
8	70	22	12x40	2	RH	**191089** ●
10	70	22	12x40	2	RH	**191090** ●
12	75	18	16x50	2	RH	**191091** ●
12	85	25	16x50	2	RH	**191092** ●

RPM: n = 18000 - 24000 min^{-1}



Feed speed v_f depending on cutting depth a_p



Workpiece material: Duromers, decorative laminates (HPL, CPL), fibre reinforced plastics
Operation: Sizing
Speed: n = 12000 - 18000 min^{-1}

Router cutter Diamaster PLUS

Application:
Router cutter for sizing and grooving with seamless cut. Particularly suitable for machining MDF with direct lacquering or foil coating of the machined edges

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., duromers, plastomers, laminated materials (HPL-compact laminate, Trespa, multiplex plywood).

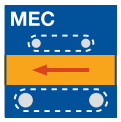
Technical information:
Negative shear angle for tear-free edges during grooving and to support the workpiece clamping of smaller parts. Resharpenable 5 to 8 times with normal wear. Short and stable tool design ideal for grooving and sizing of abrasive and hard to machine materials (HPL, Trespa, GFRP, CFRP etc.).

DP, Z 2
WO 120 2 60

D	GL	NL	S	Z	DRI	ID
mm	mm	mm	mm			
14	80	16	20x50	2	RH	**091157** ●
16	80	18	20x50	2	RH	**091156** ●

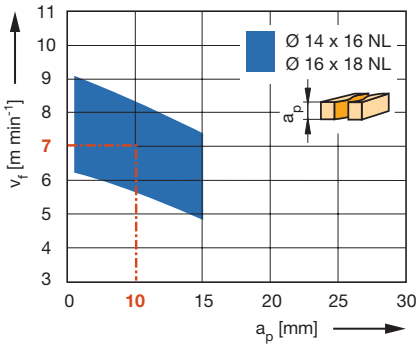
RPM: Wood derived materials: n = 16000 - 24000 min^{-1}
Plastics: n = 12000 - 18000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Duromers, decorative laminates (HPL, CPL), fibre reinforced plastics
Operation: Sizing
Speed: n = 12000 - 18000 min^{-1}

Router cutter Diamaster PLUS

Application:
Router for sizing and grooving with continuous cutting edge. Particularly suitable for machining MDF with direct lacquering or foil coating of the machined edges.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

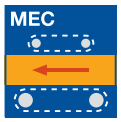
Workpiece material:
Hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., duromers, plastomers, laminated materials (HPL-compact laminate, Trespa, multiplex plywood).

Technical information:
Alternate shear angle of the edges for neutral cutting. DP plunging edge. Resharpenable 5 to 8 times with normal wear. Short and stable tool design ideal for grooving and sizing of abrasive and hard to machine materials (HPL, Trespa, GFRP, CFRP etc.).

DP, Z 2
WO 120 2

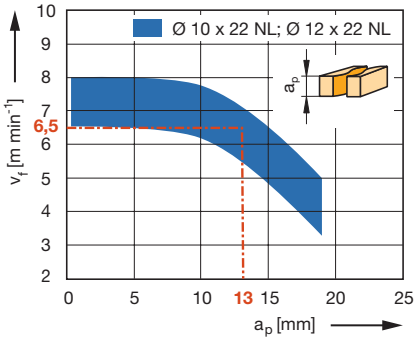
D mm	GL mm	NL mm	S mm	Z	DRI	ID
14	80	16	20x50	2	RH	**191093** ●
16	85	20	20x50	2	RH	**191094** ●

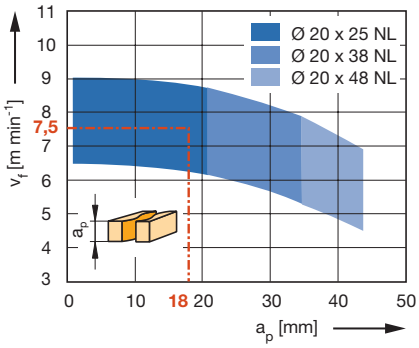
RPM: Wood derived materials: n = 16000 - 24000 min^{-1}
Plastics: n = 12000 - 18000 min^{-1}

DP

Feed speed v_f depending on cutting depth a_p





Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Uncoated chipboard = 1.1;
Veneer across grain = 0.7

Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for small and medium batch quantities.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

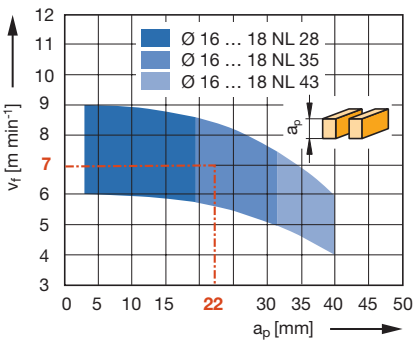
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and tungsten carbide plunging tip. Resharpenable 3 to 5 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges. Axial infeed for grooving and sizing maximum 1.0 - 1.8 x D.

DP, Z 1+1
WO 140 2 50

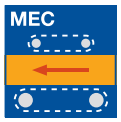
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	ID LH	ID RH
10	70	22	12x40	8		**091264** ●
12	70	22	12x40	8		**091265** ●
12	90	28	20x50	8		**191095** ●
12	100	28	25x60	8		**091266** ●
14	90	28	16x50	8		**091267** ●
16	80	22	16x50	10		**091268** ●
16	95	22	25x60	10		**091269** ●
16	90	28	16x50	10	**091271** ●	**091270** ●
16	100	28	25x60	10		**091272** ●
16	95	35	20x50	10		**091273** ●
16	105	35	25x60	10		**091274** ●
16	105	43	20x50	10		**191096** ●
16	115	43	25x60	10	**091276** ●	**091275** ●
18	90	28	20x50	10		**091277** ●
18	95	35	20x50	10		**091278** ●
18	105	43	20x50	10	**091281** ●	**091280** ●
18	115	43	25x60	10		**091282** ●
20	90	28	16x50	10		**091283** ●
20	100	28	25x60	10	**091285** ●	**091284** ●
20	95	35	20x50	10		**091286** ●
20	105	35	25x60	10		**091287** ●
20	105	43	20x50	10	**091289** ●	**091288** ●
20	115	43	25x60	10		**091290** ●
20	110	48	20x50	12	**091292** ●	**091291** ●
20	120	48	25x60	12	**091294** ●	**091293** ●
20	125	53	25x60	10		**091295** ●
20	130	58	25x60	10		**191041** ●

RPM: n = 18000 - 24000 min^{-1}



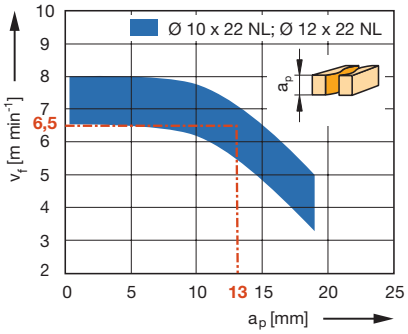
Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Veneer across grain = 0.7

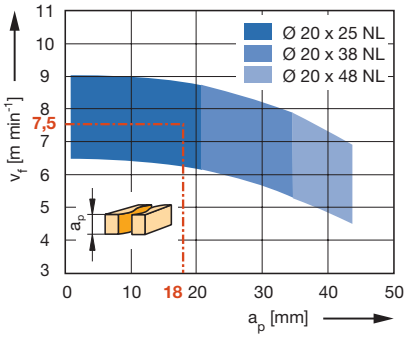
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on cutting depth a_p





Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; Uncoated chipboard = 1.1; Veneer across grain = 0.7

Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for small and medium batch quantities.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

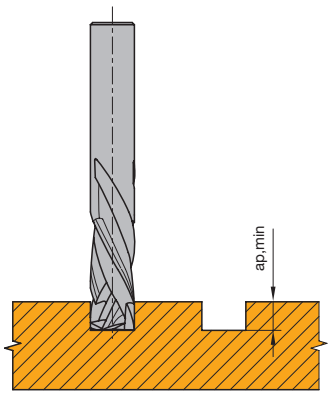
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and tungsten carbide plunging tip. Resharpenable 3 to 5 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges. Axial infeed for grooving and sizing maximum 1.0 - 1.8 x D.

DP, Z 1+1, inch types
WO 140 2 50

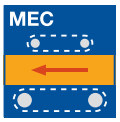
D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
12.7	1/2“	70	2 3/4“	22.23	7/8“	12,7x38	1/2“ x 1 1/2“	8	RH	**091296** ●
12.7	1/2“	80	3 1/8“	35	1 3/8“	12,7x40	1/2“ x 1 1/2“	8	RH	**191065** ●
19.05	3/4“	110	4 3/8“	48	1 7/8“	19,05x50	3/4“ x 2“	12	RH	**091297** ●

RPM: n = 18000 - 24000 min^{-1}



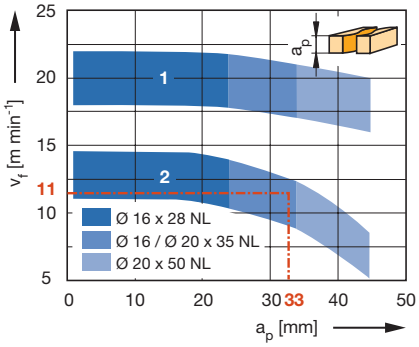
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on grooving depth a_p
1 = Jointing cut a_e = 0.5 - 2 mm
2 = Sizing cut



Workpiece material: Plastic coated chipboard
Operation: Jointing, sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.6; Veneer across grain = 0.7

Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for medium batch quantities. Z 2+2 for increased feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

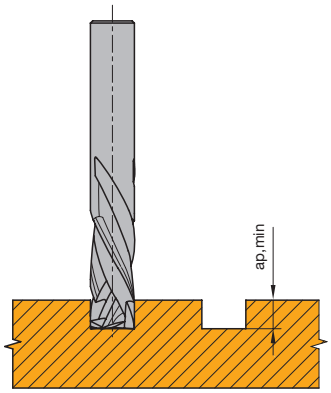
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip. Resharpenable 3 to 5 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges. Axial infeed for grooving and sizing maximum 1.0 - 1.8 x D.

DP, Z 2+2
WO 140 2 50

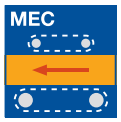
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	ID LH	ID RH
14	90	35	16x50	9		**191083** ●
16	90	28	20x50	9		**191042** ●
16	95	35	20x50	9	**191109** ●	**191043** ●
16	105	45	20x50	9		**191084** ●
18	115	55	20x50	9		**191085** ●
20	95	35	20x50	9		**191044** ●
20	105	35	25x60	9		**191045** ●
20	110	50	20x50	9		**191046** ●
20	120	50	25x60	9	**191110** ●	**191047** ●
20	125	58	25x55	9		**191097** ●

RPM: n = 16000 - 24000 min^{-1}

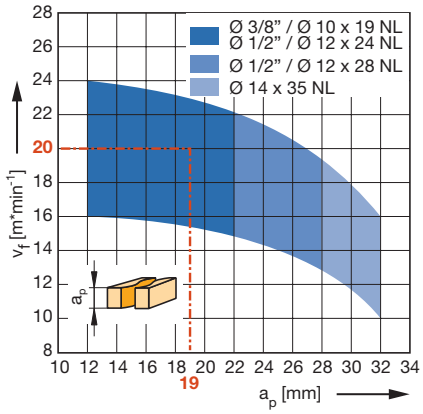


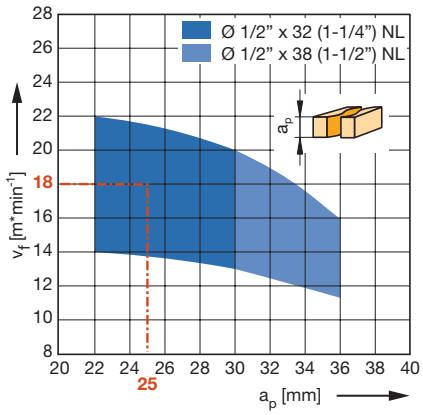
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p





Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving (Nesting) at high feed speeds. For tear-free cut edges on both sides of the workpiece.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and real - Z 2 over the complete cutting length, with DP plunging tip. Resharpenable up to 3 times with normal wear. Tool body made from high-tensile material. Important to follow the application data parameters.

DP, Z 2+2, Nesting
WO 140 2 50

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
10	65	19	10x40	9	RH	**191059** ●
12	70	24	12x42	9	RH	**191060** ●
12	75	28	12x42	9	RH	**191061** ●
14	90	35	16x50	9	RH	**191101** ●
16	105	45	20x50	9	RH	**191105** ●

DP, Z 2+2, Nesting, inch types
WO 140 2 50

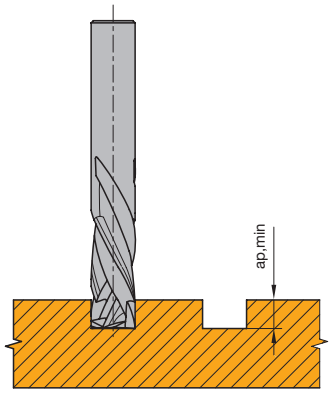
D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
9.53	3/8"	65	2 9/16"	19	3/4"	9,53x40	3/8" x 1 9/16"	9	RH	**191062** ●
12.7	1/2"	70	2 3/4"	24	15/16"	12,7x42	1/2" x 1 5/8"	9	RH	**191063** ●
12.7	1/2"	75	2 15/16"	28	1 1/8"	12,7x42	1/2" x 1 5/8"	9	RH	**191064** ●
12.7	1/2"	80	3 3/16"	32	1 1/4"	12,7x40	1/2" x 1 9/16"	9	RH	**191102** ●
12.7	1/2"	85	3 1/3"	38	1 1/2"	12,7x40	1/2" x 1 9/16"	9	RH	**191103** ●

RPM: n = 18000 - 24000 min^{-1}

Table of recommended workpiece thickness

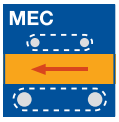
Id.	NL	workpiece thickness
191059/191062	19	9 – 16 mm
191060/191063	24	13 – 20 (22) mm
191061/191064	28	19 – 25 mm
191102	32	22 – 28 (30) mm
191101	35	22 – 32 mm
191103	38	25 – 35 mm

Workpiece material: Chipboard, plastic coated
Operation: Sizing / Nesting
RPM: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8; Chipboard uncoated = 1.1; Veneer across the grain = 0.7; Pre-trimming MDF = 1.2

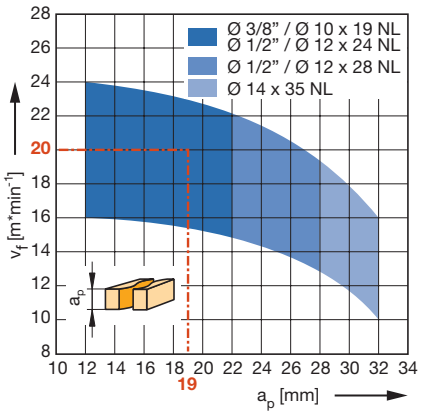


Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing / Nesting
RPM: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Chipboard uncoated = 1.1;
Veneer across grain = 0.7;
Pre trimming MDF = 1.2

Table of recommended workpiece thickness

Id.	NL	workpiece thickness
191111	24	14 – 20 (22) mm
191112	28	19 – 25 mm

Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving (Nesting) at high feed speeds. For tear free cut edges on both sides of the workpiece.

Machine:
Overhead routers with/without CNC control, machining centres, special routers with spindles for mounting shank tools.

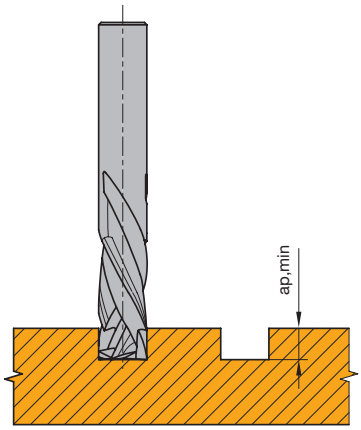
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and real - Z 2 over the complete cutting length, with DP plunging tip. Resharpenable up to 3 times with normal wear. Tool body made from high-tensile material. Important to follow the application data parameters. Tools with increased length of positive shear angle for optimized chip collection in the direction of the extraction hood – Leitz DFC®.

DP, Z 2+2, increased length of positive shear angle, Nesting application
WO 140 2 50

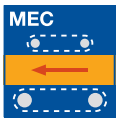
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
12	70	24	12x42	14	RH	**191111** ●
12	75	28	12x42	19	RH	**191112** ●

RPM: n = 18000 - 24000 min^{-1}

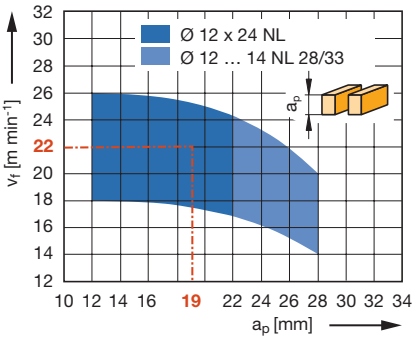


Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org


Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing / Nesting
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Uncoated chipboard = 1.1;
Veneer across grain = 0.7;
Pre trimming MDF = 1.2

Table of recommended workpiece thickness

Id.	NL	workpiece thickness
191030	19	9 – 16 mm
191031/191057	24	13 – 20 (22) mm
191032/191058	28	19 – 25 mm
191033	33	20 – 30 mm

Router cutter Diamaster PRO^3

Application:
Router cutter for sizing and grooving (Nesting) at high feed speeds. For tear-free cut edges on both sides of the workpiece.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and real - Z 3 over the complete cutting length, with DP plunging tip. Resharpenable up to 3 times with normal wear. Tool body made from high-tensile material. Important to follow the application data parameters.

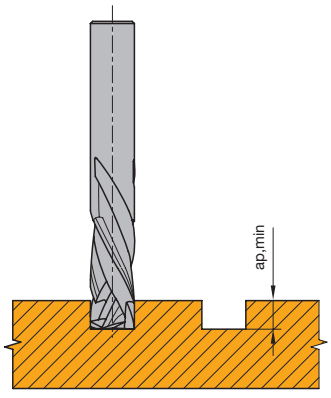
DP, Z 3+3, Nesting
WO 140 2 50

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
12	65	19	12x42	9	RH	**191030** ●
12	70	24	12x42	9	RH	**191031** ●
12	75	28	12x42	9	RH	**191032** ●
14	90	33	16x50	9	RH	**191033** ●

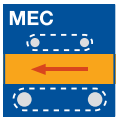
DP, Z 3+3, Nesting, inch types
WO 140 2 50

D mm	D in	GL mm	GL in	NL mm	NL in	S mm	S in	$a_{p\ min}$ mm	DRI	ID
12.7	1/2“	70	2 3/4“	24	15/16“	12,7x42	1/2“ x 1 5/8“	9	RH	**191057** ●
12.7	1/2“	75	2 15/16“	28	1 1/8“	12,7x42	1/2“ x 1 5/8“	9	RH	**191058** ●

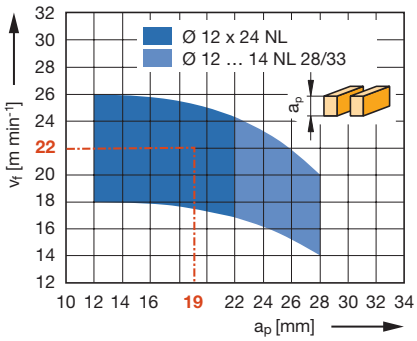
RPM: n_{max} = 24000 min^{-1}



Minimum grooving depth $a_{p\ min}$ for tear-free cut


Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing / Nesting
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Uncoated chipboard = 1.1;
Veneer across grain = 0.7;
Pre trimming MDF = 1.2

Table of recommended workpiece thickness

Id.	NL	workpiece thickness
191113	24	14 – 20 (22) mm
191114	33	20 – 30 mm

Router cutter Diamaster PRO^3

Application:
Router cutter for sizing and grooving (Nesting) at high feed speeds. For tear free cut edges on both sides of the workpiece.

Machine:
Overhead routers with/without CNC control, machining centres, special routers with spindles for mounting shank tools.

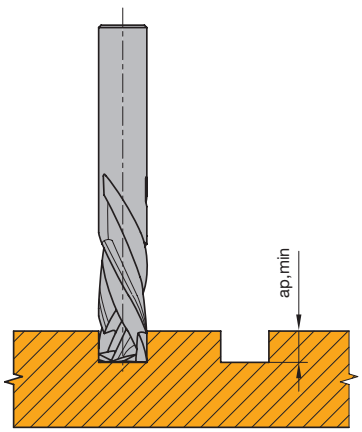
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and real - Z 3 over the complete cutting length, with DP pluning tip. Resharpenable up to 3 times with normal wear. Tool body made from high-tensile material. Important to follow the application data parameters. Tools with increased length of positive shear angle for optimized chip collection in the direction of the extraction hood – Leitz DFC®.

DP, Z 3+3, increased length of positive shear angle, Nesting application
WO 140 2 50

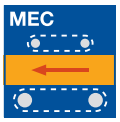
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
12	70	24	12x42	14	RH	**191113** ●
14	90	33	16x50	19	RH	**191114** ●

RPM: n_{max} = 24000 min^{-1}

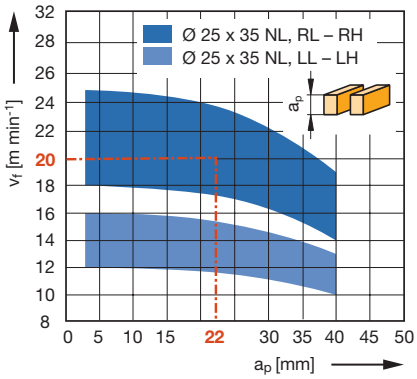


Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Router cutter Diamaster PRO, Z 3+3 / Z 2+2
Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; Uncoated chipboard = 1.1; Veneer across grain = 0.7

Router cutter Diamaster PRO

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides of the workpiece. Suitable for right hand and left hand cutting (e.g. protective cutting) without tool change.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

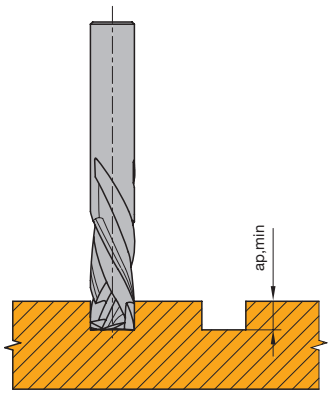
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., for tear-free edges on both sides of coated workpieces.

Technical information:
Spiral cutting edge arrangement with tungsten carbide plunging tip. Right hand rotation: Z 3+3, left hand rotation: Z 2+2. Resharpenable 3 to 5 times with normal wear. Right and left hand rotation in one tool (by adjusting the Z-axis and changing the direction of rotation).

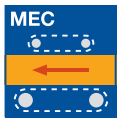
DP, RH + LH combination tool
WO 140 2 50

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
25	120	24 + 24	25x50	12	LH, RH	**191034** ●
25	145	35 + 35	25x55	12	LH, RH	**191020** ●

RPM: n_{max} = 24000 min^{-1}



Minimum grooving depth $a_{p\ min}$ for tear-free cut



DP

Router cutter Diamaster PLUS

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., duromers, plastomers, laminated materials (HPL-compact laminate, Trespa, multiplex plywood).

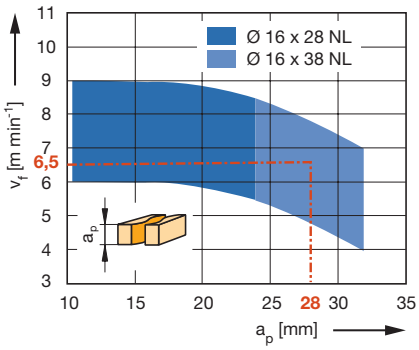
Technical information:
Cutting edges with alternate shear angle and tungsten carbide plunging tip (ID **090174** with DP plunging edge). Resharpenable 5 to 8 times with normal wear. Cuts for painting in MDF require finishing with tools with continuous edges. Stable and rigid tips suitable for machining abrasive and hard to machine materials (HPL, Trespa, GFRP, CFRP etc.).

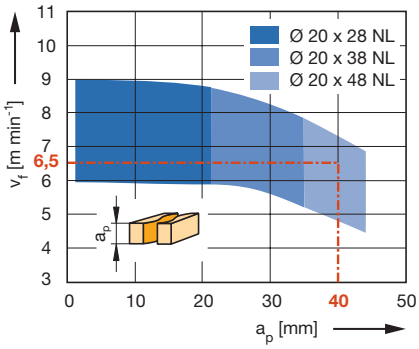
DP, Z 1+1
WO 140 2

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
12	90	24	16x50	9	RH	**090174** ●
16	90	28	20x60	12	RH	**090188** ●
18	110	48	20x60	12	RH	**091101** ●
20	130	58	25x60	12	RH	**090167** ●

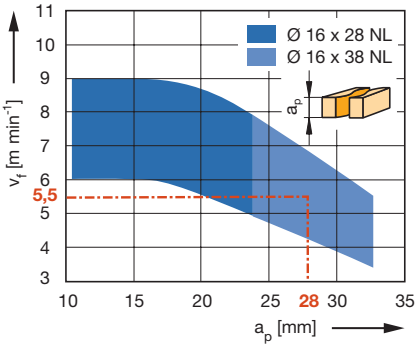
RPM: n = 16000 - 24000 min^{-1}

Feed speed v_f depending on cutting depth a_p

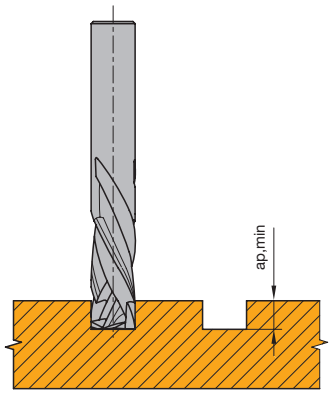




Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; Veneer across grain = 0.7

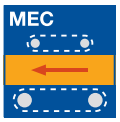


Workpiece material: Decorative laminates
Operation: Sizing
Speed: n = 18000 min^{-1}



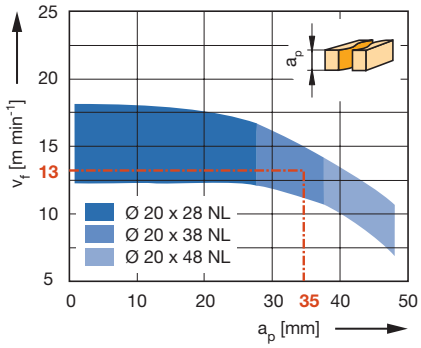
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

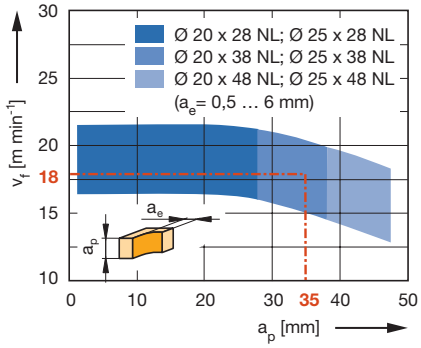


DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; Paper coated = 0.8



Router cutter Diamaster QUATTRO

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for medium and large batch quantities. Z 2+2 for increased feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

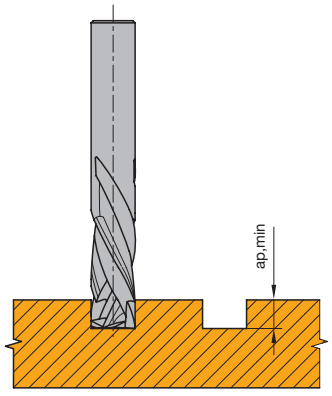
Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip (ID **091251**, **091252**, **091253** with tungsten carbide plunging tip). Resharpenable 5 to 8 times with normal wear. Cuts for painting in MDF require finishing with tools with continuous edges.

DP, Z 2+2
WO 140 2

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	ID LH	ID RH
20	90	28	20x50	12		**091235** ●
20	110	48	20x50	12		**091238** ●
20	110	38	25x60	12		**091241** ●
20	120	48	25x60	12	**091246** ●	**091247** ●
25	110	38	25x60	12		**091251** ●
25	120	48	25x60	12	**091252** ●	**091253** ●

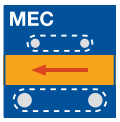
RPM: n = 16000 - 24000 min^{-1}

Workpiece material: Plastic coated chipboard
Operation: Jointing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.9; Paper coated = 0.8; Veneer across grain = 0.8



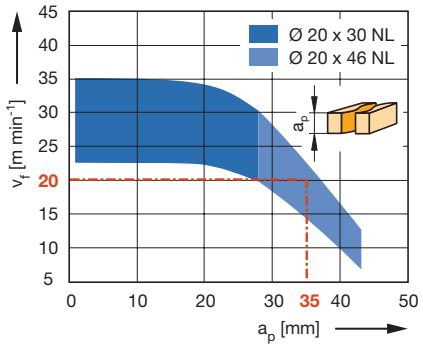
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

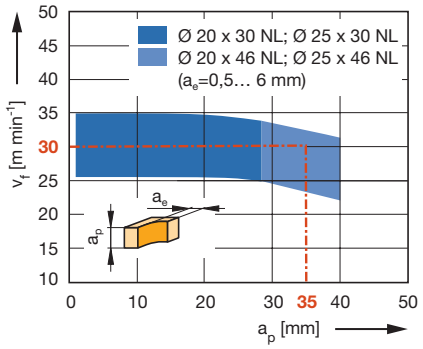


DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8; Paper coated = 0.8



Router cutter Diamaster PLUS, Z 3+3

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for large batch quantities. Z 3+3 at high feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

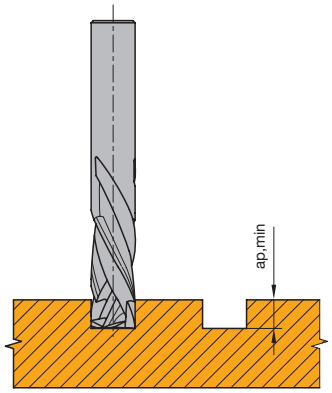
Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip. Resharpenable 8 to 12 times with normal wear. Cuts for painting in MDF require finishing with tools with continuous edges. Tools with negative twist support the tool clamping especially for small parts.

DP, Z 3+3, with negative twist
WO 140 2

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	ID LH	ID RH
18	100	24	25x60	12		**091204** ●
20	90	24	20x50	12		**091207** ●
20	100	24	25x60	12		**091209** ●
20	105	30	25x60	12	**091170** ●	**091171** ●
20	110	38	25x60	12		**091211** ●
20	120	46	25x60	12		**091174** ●
25	100	24	25x60	12		**091213** ●
25	105	30	25x60	12	**091176** ●	**091177** ●
25	110	38	25x60	12	**091214** ●	**091215** ●
25	120	46	25x60	12	**091179** ●	**091180** ●

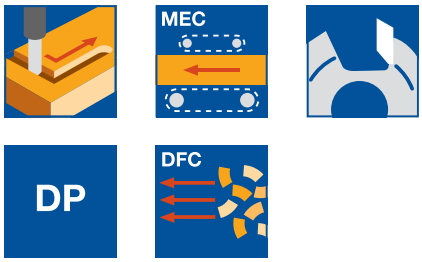
RPM: n = 16000 - 24000 min^{-1}

Workpiece material: Plastic coated chipboard
Operation: Jointing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.9; Paper coated = 0.8; Veneer across grain = 0.8



Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Router cutter Diamaster PLUS, Z 3+3

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for large batch quantities. Z 3+3 at high feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

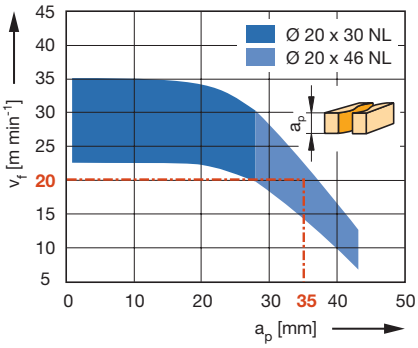
Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip. Resharpenable 8 to 12 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges. Tools with positive twist for good chip removal into the extraction system - Leitz DFC®.

DP, Z 3+3, with positive twist, DFC-design
WO 140 2

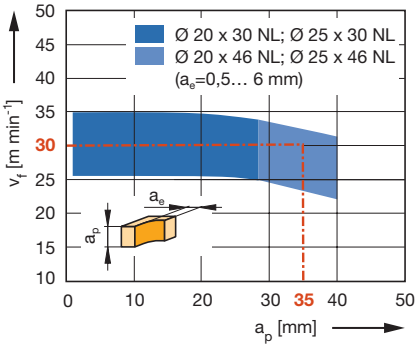
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	ID LH	ID RH
16	100	24	20x50	21		**091254** ●
20	105	30	25x60	26		**191026** ●
20	110	38	25x60	31		**191098** ●
20	120	46	25x60	39		**191099** ●
25	105	30	25x60	26		**191027** ●
25	110	38	25x60	32		**091217** ●
25	120	46	25x60	39	**091218** ●	**091219** ●

RPM: n = 16000 - 24000 min^{-1}

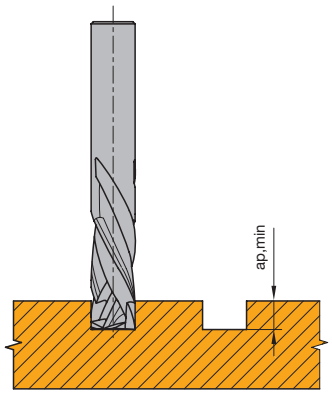
Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8; Paper coated = 0.8

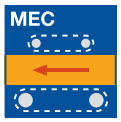


Workpiece material: Plastic coated chipboard
Operation: Jointing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.9; Paper coated = 0.8; Veneer across grain = 0.8



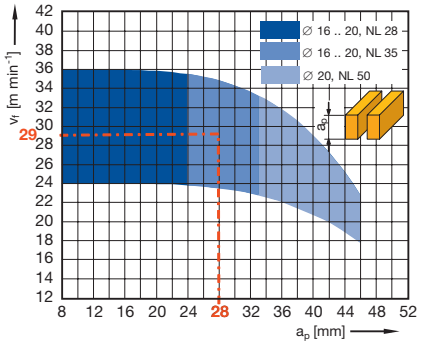
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8; Chipboard, uncoated = 1.1; Veneer across grain = 0.7; Pre-cutting MDF = 1.2

Router cutter Diamaster PLUS^3, Z 3+3

Application:
Router cutter for sizing and grooving with increased performance time in engineered wood boards. For tear-free cut edges on both sides. Suitable for large batch quantities. Z 3+3 for high feed speeds.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

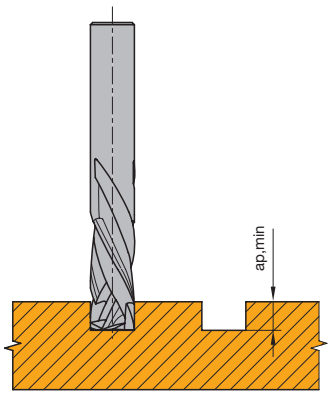
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.)

Technical information:
Spiral cutting edge arrangement with alternate shear angle and real - Z 3 over the complete cutting length. DP plunging tip. Resharpenable 8 to 12 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges. Tools with negative twist support the tool clamping especially for small parts.

DP, Z 3+3, with negative shear angle
WO 140 2

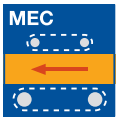
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	ID LH	ID RH
16	85	28	20x50	9		**191048** ●
16	95	35	20x50	9	**191050** ●	**191049** ●
20	85	28	20x50	12		**191051** ●
20	105	35	25x60	12	**191053** ●	**191052** ●
20	120	50	25x60	12		**191054** ●

RPM: n = 18000 - 24000 min^{-1}



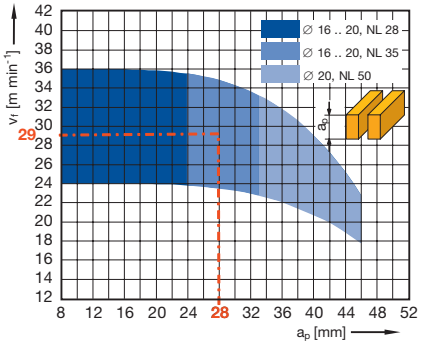
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8; Chipboard, uncoated = 1.1; Veneer across grain = 0.7; Pre-cutting MDF = 1.2

Router cutter Diamaster PLUS^3, Z 3+3

Application:
Router cutter for sizing and grooving with increased performance time in particle boards. For tear free cut edges on both sides. Suitable for large batch quantities. Z 3+3 for high feed speeds.

Machine:
Overhead routers with/without CNC control, machining centres, special routers with spindles to mount shank tools.

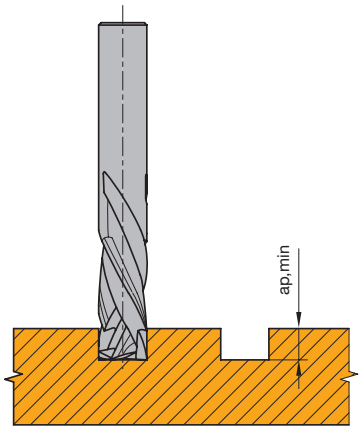
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and real - Z 3 over the complete cutting length. DP plunging tip. Resharpenable 8 to 12 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges. Tools with increased length of positive shear angle for optimized chip collection in the direction of the extraction hood – Leitz DFC®.

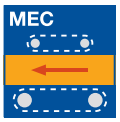
DP, Z 3+3, increased length of positive shear angle, DFC design
WO 140 2

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
16	85	28	20x50	23	RH	**191115** ●
20	105	35	25x60	27	RH	**191116** ●

RPM: n = 18000 - 24000 min^{-1}

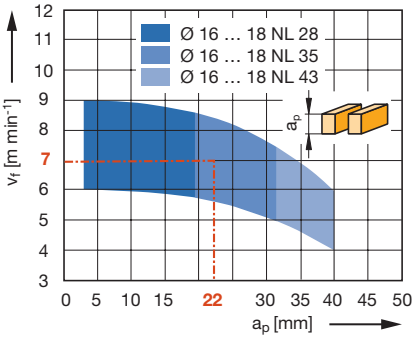


Minimum grooving depth $a_{p\ min}$ for tear-free cut



DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Veneer across grain = 0.7;
Extremely sensitive decors = 0.7 - 0.8

Router cutter Diamaster PRO EdgeExpert

Application:
Routers for sizing and grooving with increased performance time in engineered wood boards. For tear-free cutting edges on both sides especially for sensitive and brittle decorative papers, laminating foils and veneers. Suitable for small and medium batch sizes.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip. Enlarged shear angle for excellent edge quality for sensitive and brittle decorative papers, laminating foils and veneers. Resharpenable 2 to 4 times with normal wear. Cuts to be painted in MDF require finishing with tools with continuous edges.
ID **191128** with a body made of vibration-damping alloy.

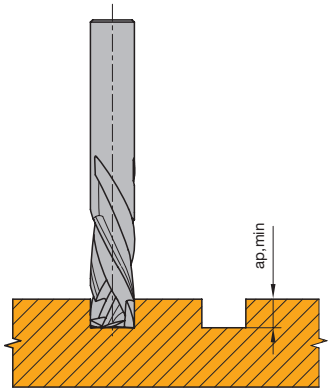
DP, Z 1+1
WO 140 2 50

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
16	85	25	16x50	9	RH	**191069** ●
16	95	35	20x50	9	RH	**191070** ●

DP, Z 2+2
WO 140 2 50

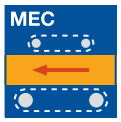
D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
14	90	28	16x50	9	RH	**191128** ●

RPM: n = 18000 - 24000 min^{-1}



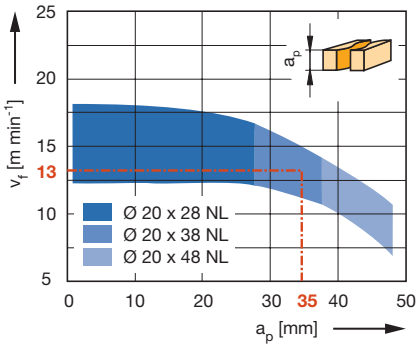
Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 18000 min^{-1}
Correction factor for v_f: MDF = 0.8; Paper coated = 0.8

Router cutter Diamaster QUATTRO EdgeExpert

Application:
Routers for sizing and grooving with increased performance time in engineered wood boards. For tear-free cutting edges on both sides especially for sensitive and brittle decorative papers, laminating foils and veneers. Suitable for medium and large batch sizes. Z 2+2 for increased feed rates.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

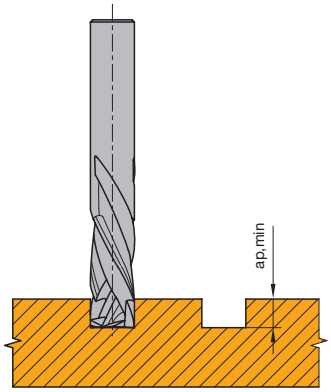
Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip. Enlarged shear angle for excellent edge quality for sensitive and brittle decorative papers, laminating foils and veneers. Resharpenable 4 to 6 times with normal wear. Precutting the workpieces is recommended. Cuts to be painted in MDF require finishing with tools with continuous edges.

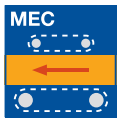
DP, Z 2+2
WO 140 2

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
20	90	32	20x50	12	RH	**191071** ●
20	120	48	25x60	12	RH	**191072** ●

RPM: n = 18000 - 24000 min^{-1}

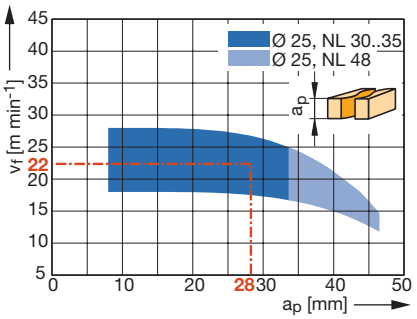


Minimum grooving depth $a_{p\ min}$ for tear-free cut

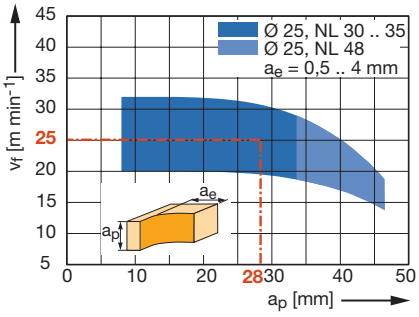


DP

Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Sizing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Veneer across grain = 0.7;
Extremely sensitive decors = 0.7 - 0.8



Router cutter Diamaster PLUS^3 EdgeExpert, Z 3+3

Application:
Routers for sizing and grooving with increased performance time in engineered wood boards. For tear-free cutting edges on both sides especially for sensitive and brittle decorative papers, laminating foils and veneers. Suitable for very large batch sizes. Z 3+3 for increased feed rates.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

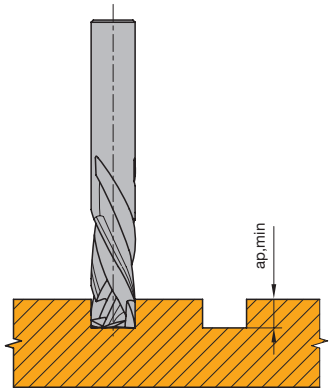
Technical information:
Spiral cutting edge arrangement with alternate shear angle and DP plunging tip. Enlarged shear angle for excellent edge quality for sensitive and brittle decorative papers, laminating foils and veneers. Resharpenable 5 to 8 times with normal wear. Precutting the workpieces is recommended. Especially suitable on CNC machining centres with laser edgebanding technology. Cuts to be painted in MDF require finishing with tools with continuous edges.

DP, Z 3+3, symmetric edge arrangement
WO 140 2

D mm	GL mm	NL mm	S mm	$a_{p\ min}$ mm	DRI	ID
25	105	30	25x60	12	RH	**191073** ●
25	105	35	25x55	12	RH	**191074** ●
25	120	48	25x60	12	RH	**191075** ●

RPM: n = 18000 - 24000 min^{-1}

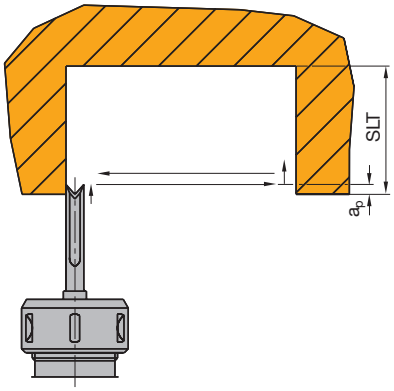
Workpiece material: Plastic coated chipboard
Operation: Jointing
Speed: n = 24000 min^{-1}
Correction factor for v_f: MDF = 0.8;
Veneer across grain = 0.7;
Extremely sensitive decors = 0.7 - 0.8



Minimum grooving depth $a_{p\ min}$ for tear-free cut

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HS



Application example of cutting slots
a_p = 0.8 mm (reciprocating movement)

Slot mortising bits

Application:
Router cutter for cutting tear-free longitudinal slots with stepwise infeed.

Machine:
Special routers with reciprocating spindles.

Workpiece material:
Softwood and hardwood.

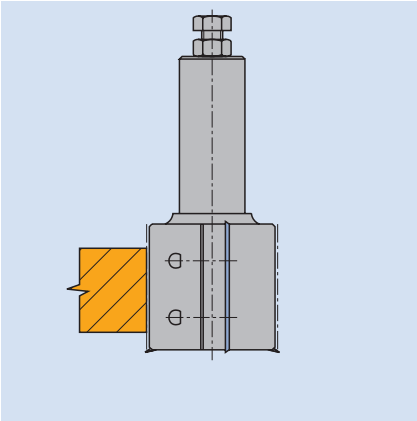
Technical information:
For softwood and hardwood. Suitable for right hand and left hand rotation, tools resharpenable on the face side. Constant diameter after sharpening.

HS, Z 2
WB 510 0

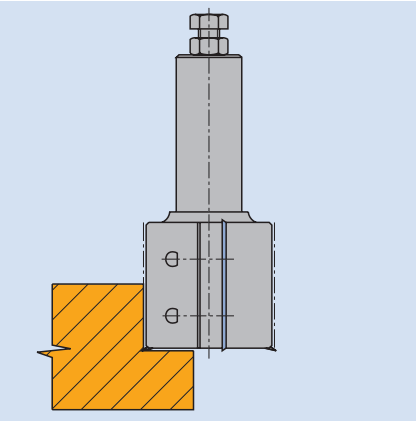
D mm	GL mm	S mm	SLT mm	QAL	ID
6	90	13x40	38	HS	**037020** ●
8	95	13x40	42	HS	**037022** ●
10	105	13x40	50	HS	**037024** ●
12	115	13x40	60	HS	**037026** ●

RPM: n = 4500 - 9000 min^{-1}

Working step/Application	Jointing, rebating and bevelling.
Workpiece material [recommended cutting material]	Softwood and hardwood [HW]. Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc. [HW, DP]. Plywood [HW, DP]. Duromers [HW, DP]. Plastomers [HW, DP]. Solid surface material (Corian, Varicor etc.) [HW, DP].
Machine	Stationary routers with/without CNC control. Milling machines with spindles to mount shank tools.
Operation	For conventional and climb cut operations, limited chip removal.

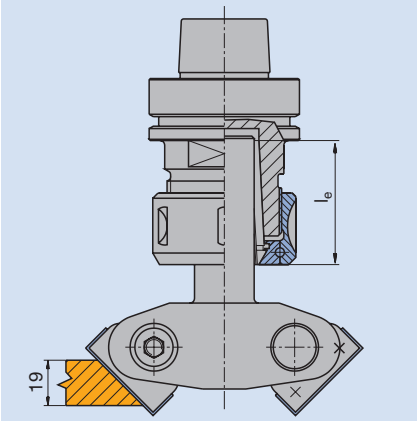


Jointing

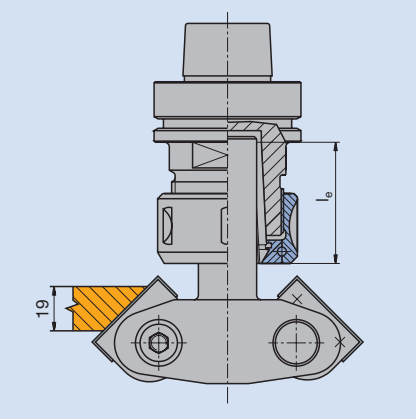


Rebating

Bevelling with adjustable bevel cutterhead



Bevelling top edge



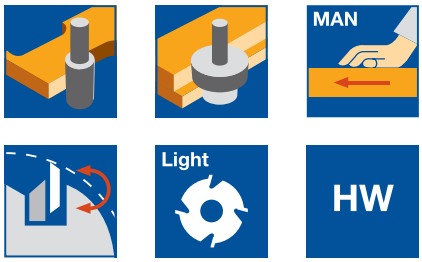
Bevelling bottom edge

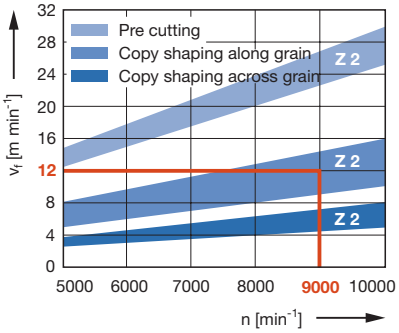
Note:
When bevelling from below, the minimum shank clamping length l_e must be observed. Under no circumstances must the tool be clamped at a shorter length.

Shank d x e	l_e min [mm]
20 x 50	40
25 x 60	45

d = Shank diameter
e = Shank length

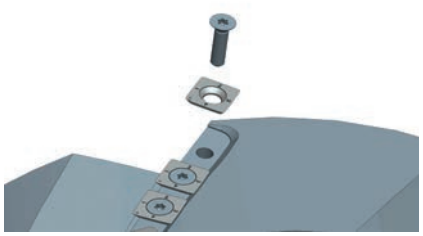
Application parameters	**RPM/feed speed** The recommended RPM and feed speeds are detailed in the diagrams next the tool tables.
Information	Smooth cutting results can only be achieved with tools having a continuous cutting edge. Spurs are required when rebating solid wood.
Workpiece clamping	Sufficient workpiece clamping is very important on stationary machines. Insufficient clamping can reduce both the cut quality and tool life considerably. Panels can be held in place with vacuum clamping, but sometimes additional mechanical clamping is required. Small and arched workpieces in particular require special jigs or clamping devices which must be made by the customer or sourced from specialist suppliers.





Feed speed v_f depending on the number of teeth Z and speed n for solid wood (pre trimming and copy shaping)
Example for tool diameter 125 mm:
n = 9000 min^{-1}
Z 2
Application: copy shaping along the grain
v_f = 12 m min^{-1}

Order example:
Tool set ID **132737** mounted on arbor ID **042951**, HSK-F 63 (A = 80 mm). When giving the arbor ID observe the required clamping diameter.



Copy shaping cutterhead - HeliCut 15

Application:
For pre-cutting, jointing and copy shaping of large cutting depths, along and across to the fibre direction. For copy shaping of arched workpieces with template, ball bearing and guide ring, as well as for the application on CNC controlled stationary routers e.g. joinery machines, window manufacturing plants.

Machine:
Spindle moulders and profile milling machines, double-end tenoner, stationary routers with/without CNC control.

Workpiece material:
Softwood and hardwood, glulam and laminated wood.

Technical information:
Noise reduced design with staggered knives, applicable for MAN and MEC. Mountable on clamping arbor. Also applicable for rebating. Application of the same knives as peripheral knife and spur. The cutting edges of the HW knives are numbered. No clamping wedges, direct tangential knife clamping thus easy handling of the knife change without further setting gaugesd. By default mounted with HW turnblade knives ID **009543**.

Copy shaping cutterhead - HeliCut 15
SL 499 1, WW 230 1 07

Tool Type	ABM mm	QAL	AM PCS	Z	V	ID
Cutterhead	60x81,5x20	HW-MF	16	2	2	**132600** ●
Cutterhead mounted on arbor	1-part	HW	16	2	2	**132736** □
Cutterhead	80x81,5x30	HW-MF	16	2	2	**132608** ●
Cutterhead mounted on arbor	1-part	HW	16	2	2	**132737** □
Cutterhead	125x93,7x30	HW-MF	20	2	2+2	**132604** ●
Cutterhead mounted on arbor	1-part	HW	20	2	2+2	**132738** □
Cutterhead	125x116,6x30	HW-MF	24	2	2+2	**132605** ●
Cutterhead mounted on arbor	1-part	HW	24	2	2+2	**132739** □

RPM: D 60 mm: n_{max} = 20000 min^{-1}
D 80 mm: n_{max} = 18000 min^{-1}
D 125 mm: n_{max} = 12000 min^{-1}

More dimensions on request.

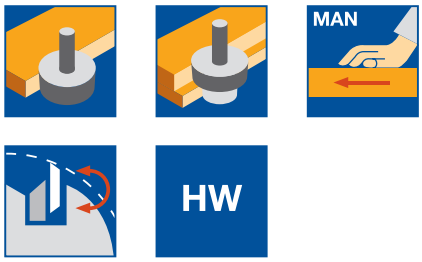
Spare knives:

BEZ	ABM mm	QAL	BEM	VE PCS	ID
Turnblade knife	15x15x2,5	HW-MF	HeliCut 15	10	**009543** ●
Turnblade knife	15x15x2,5	HW	HeliCut 15	10	**009549** ●

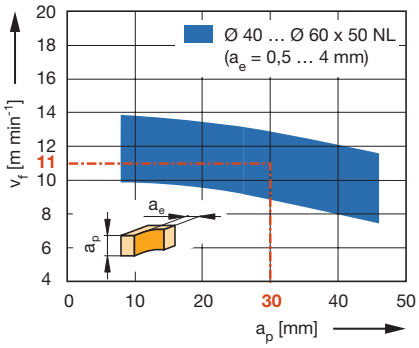
Spare parts:

BEZ	ABM mm	for D mm	ID
Countersink screw, Torx® 20	M5x12	60	**007898** ●
Countersink screw, Torx® 20	M5x14.2-8.8	80	**007394** ●
Countersink screw, Torx® 20	M5x18	125	**114030** ●
Torx® key	Torx® 20		**006091** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Feed speed v_f depending on cutting depth a_p



Workpiece material: Plastic coated chipboard
Operation: Jointing
Speed: n = 16000 min^{-1}
Correction factor for v_f: MDF = 0.9;
Paper coated = 0.8;
Machining across grain = 0.7

Turnblade jointing / rebating cutterhead

Application:
For jointing and rebating with constant tool diameter.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
HW turnblades Z 2 with straight cut for offset-free areas on pre-cut workpieces or on workpieces sized with roughing cutters. Mounted spurs especially for the production of tear-free rebates in softwood and hardwood. Smooth running through closed, round shape of the tool body.

HW, Z 2 / V 2
WL 402 1

D mm	GL mm	SB mm	S mm	ID
40	120	50	25x60	**039235** ●
50	120	50	25x60	**039239** ●
60	113	50	25x60	**039243** ●

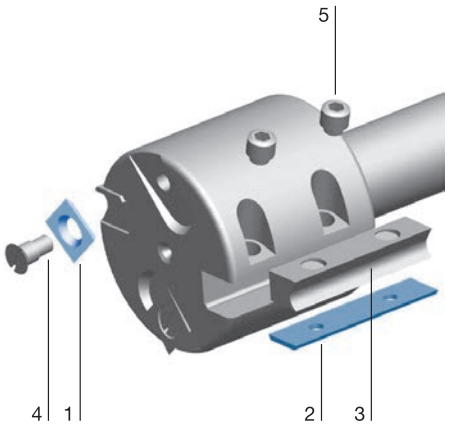
RPM: n_{max} = 18000 min^{-1}

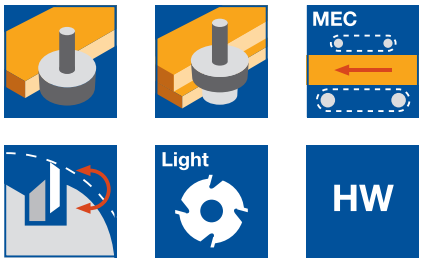
Spare knives:

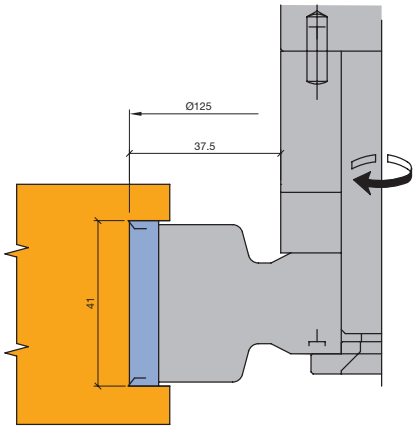
Part-no.	BEZ	ABM mm	QAL	VE PCS	ID
1	Turnblade spur VS1	14x14x2	HW-F	10	**005099** ●
2	Turnblade knife	50x12x1.5	HW-05F	10	**005086** ●

Spare parts:

Part-no.	BEZ	ABM mm	for D mm	ID
3	Clamping wedge	48x11.6x9		**009871** ●
4	Screw with slot	M5x12		**005744** ●
5	Allen screw	M8x8	40/50	**006245** ●
5	Allen screw	M8x14	60	**006073** ●
	Allen key	SW 4		**005445** ●







Order example:
Tool set ID **426080** mounted on arbor ID **042847**, HSK-F 63 (A = 80 mm). When ordering choose arbors with d = 20 mm and clamping length 70 mm.

Turnblade jointing / rebating cutterhead

Application:
Optimized for rebating, jointing and grooving with and against feed.

Machine:
Stationary routers with/without CNC control, CNC machining centres.

Workpiece material:
Softwood and hardwood, compound materials of solid wood and wood derived materials, uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutterhead with turnblades and alternate shear angle, righthand rotation. Tool body in lightweight aluminium for a better dynamic situation.

HW, Z 2 / V 2
SL 199 2, SW 500 2

Tool Type	QAL	Z	V	ID
Cutterhead with spacers	HW	2	2	**126039** ●
Cutterhead mounted on arbor	HW	2	2	**426080** □

RPM: n_{max} = 13700 min^{-1}

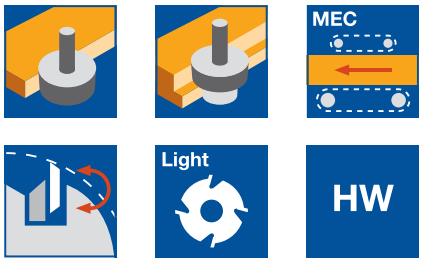
Spare knives:

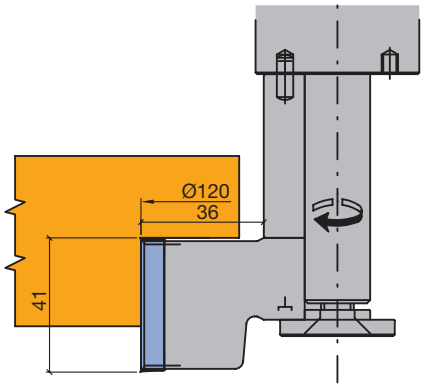
BEZ	ABM mm	ID
Turnblade knife	40x8x1.5	**005074** ●
Turnblade spur VS2	19x19x2	**005115** ●

Spare parts:

BEZ	ABM mm	ID
Clamping wedge	38x18.75x8.27	**009675** ●
Countersink screw, Torx® 20	M5x8.5	**007808** ●
Clamping screw w. disc, Torx® 25	M6x18.5	**007442** ●
Cylindrical screw with ISK	M5x80	**007097** ●
Torx® key	Torx® 20	**117503** ●
Torx® key	Torx® 25	**117504** ●
Allen key	SW 4, L 100	**005451** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Order example:
Tool set ID **426081** mounted on arbor ID **042847**, HSK-F 63 (A = 80 mm). When ordering choose arbors with d = 20 mm and clamping lenght 70 mm.

Turnblade jointing / rebating cutterhead

Application:
Optimized for rebating, jointing and grooving with and against feed.

Machine:
Stationary routers with/without CNC control, CNC machining centres.

Workpiece material:
Softwood and hardwood, compound materials of solid wood and wood derived materials, uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutterhead with turnblades and alternate shear angle, righthand rotation. Knife seatings for grooving and edging knives for seal groove and edge roundings. Tool body in lightweight aluminium for a better dynamic situation.

HW, Z 2 / V 2, with seatings for edging knives
SL 499 2, SW 530 2

Tool Type	QAL	Z	V	ID
Cutterhead with spacers	HW	2	2	**126040** ●
Cutterhead mounted on arbor	HW	2	2	**426081** □

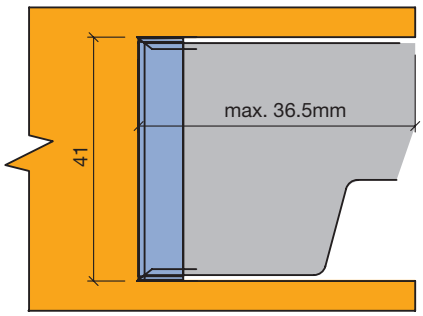
RPM: n_{max} = 14300 min^{-1}

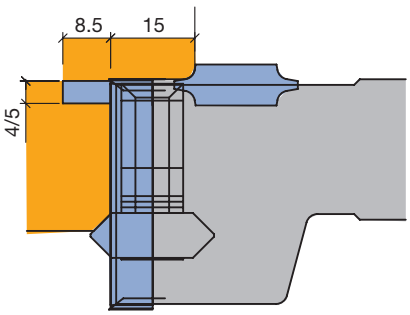
Spare knives:

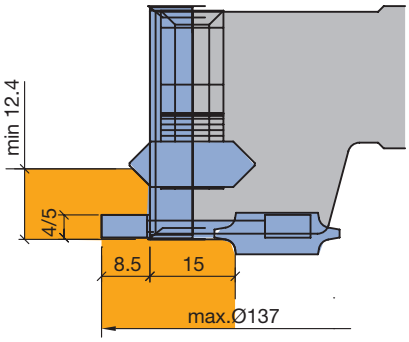
BEZ	ABM mm	R mm	FAW °	ID
Turnblade knife	40x8x1.5			**005074** ●
Turnblade spur VS2	19x19x2			**005115** ●
Edging knife	KM 11/0		45°	**008268** ●
Edging knife	KM 12/3	2		**008307** ●
Turnblade grooving knife NA5	35.2x15x5			**008318** ●
Turnblade grooving knife NA4	35.2x15x4			**008317** ●

Spare parts:

BEZ	BEM	ABM mm	ID
Set of spacers	for groove/edge knives	12.9x20x6.1	**028565** ●
Spacer	for groove/edge knives	13/6.1x3	**028185** ●
Spacer	for groove/edge knives	13/6.1x1	**028037** ●
Countersink screw, Torx® 20	for groove/edge knives	M6x40	**006090** ●
Countersink screw, Torx® 20	for groove/edge knives	M6x14	**006085** ●
Clamping wedge		38x18.75x8.27	**009675** ●
Countersink screw, Torx® 20	for spurs	M5x8.5	**007808** ●
Clamping screw w. disc, Torx® 25	Torx® 25	M6x18.5	**007442** ●
Cylindrical screw with ISK		M5x80	**007097** ●
Torx® key		Torx® 20	**117503** ●
Torx® key		Torx® 25	**117504** ●
Allen key		SW 4, L 100	**005451** ●







● available ex stock
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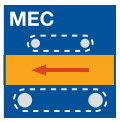
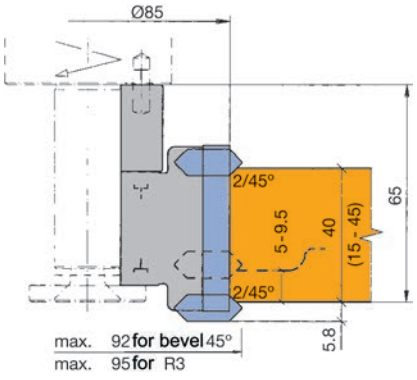
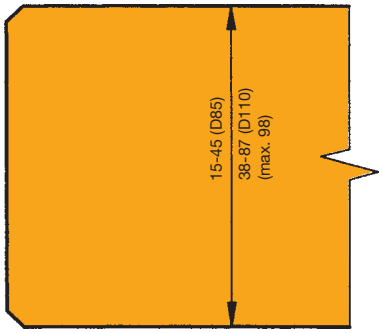



Examples





Jointing cutterhead set with edging knives

Application:
For jointing and rounding or bevelling narrow edges with a constant tool diameter.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood and hardwood, compound materials of solid wood and wood derived materials, uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Tungsten carbide turnblade knives Z 2 with shear angles. Narrow edge profiling with edging knives mounted on both sides of tool. Smooth running due to closed, round tool body.

HW, Z 2, with seatings for edging knives
SL 299 2, SW 510 2

Tool Type	ABM mm	QAL	Z	ID
Tool set without arbor, with spacer	85x50x20.1-part	HW	2	**125038** ●
Tool set mounted on arbor	1-part.HD40	HW	2	**426000** □
Tool set without arbor, with spacer	110x100x28x30	HW	2	**411179** ●
Tool set mounted on arbor	1-part	HW	2	**426085** □

RPM: D 85 mm: n_{max} = 17900 min^{-1}
D 110 mm: n_{max} = 15600 min^{-1}

Unless stated otherwise, tools are right hand rotation.
Cutter arbor see section Clamping Systems.

Spare knives:

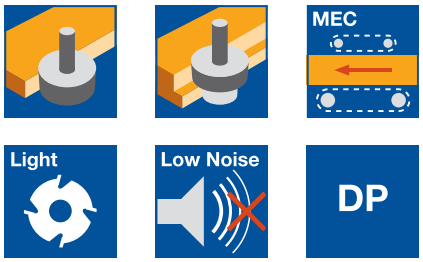
BEZ	ABM mm	QAL	R mm	FAW °	VE PCS	ID
Turnblade knife	50x8x1.5	HW-05			10	**005402** ●
Turnblade knife	100x8x1.5	HW-05				**005405** ●
Edging knife	KM 12/4	HW-F	1.5			**008272** ●
Edging knife	KM 12/3	HW-F	2			**008307** ●
Edging knife	KM 12/0	HW-F	3			**008270** ●
Edging knife	KM 15/0	HW-F	3			**008275** ●
Edging knife	KM 12/1	HW-F	3			**008271** ●
Edging knife	KM 11/0	HW-F		45°		**008268** ●

Spare parts:

BEZ	ABM mm	ID
Clamping wedge	48x18.75x8.27	**009677** ●
Clamping wedge	98x18.75x8.27	**009681** ●
Clamping screw w. disc, Torx® 25	M6x18.5	**007442** ●
Countersink screw, Torx® 20	M6x35	**007098** ●
Torx® key	Torx® 20	**117503** ●
Torx® key	Torx® 25	**117504** ●
Magnetic setting gauge	0.3/0.8	**005376** ●

Order example:
Tool set ID **426000** mounted on arbor ID **041125**, shank 25x60 mm.
When ordering, choose arbors with d = 20 mm and clamping length 55 mm.

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Jointing and rebating cutterhead WhisperCut

Application:
For tear-free and low noise jointing of the cutting surface.

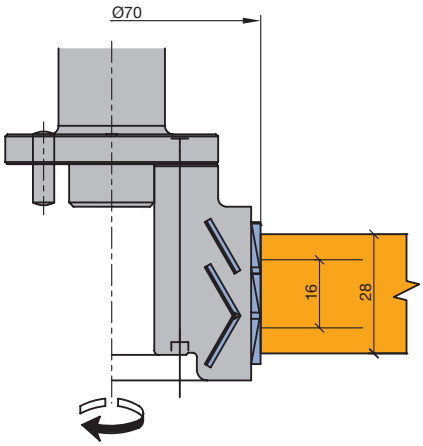
Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, paper coated, fibre reinforced plastics (GFRP, CFRP etc.).

Technical information:
Cutterhead with DP knives with alternate shear angle for tear-free jointing edges and cutting surfaces. Noise reduced design with noise reduction of up to 5 dB(A) and highly efficient chip collection (>95%) by DFC. Significant weight reduction through lightweight aluminiuml tool body. Several times applicable through exchangeable knives. 0.6 mm resharpening area.

Diamaster WhisperCut jointing cutterhead
WM 230 2 01, WP 299 2

Tool Type	ABM mm	QAL	Z	ID
Cutterhead	70x33x20	DP	2/2/2	**192273** ●
Cutterhead mounted on arbor	1-part/HD28	DP	2/2/2	**192274** □



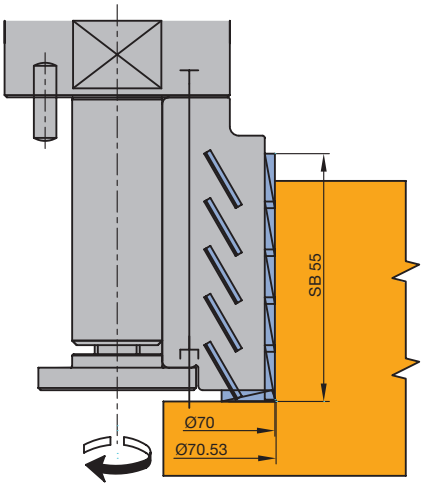
Diamaster WhisperCut jointing cutterhead

Application:
For tear-free and low noise rebating of the cutting surface.

Technical information:
Cutterhead with DP knives. For Tear-free rebates due to optimised knife arrangement with shear angle and separate bottom tip (spurs). Not suitable for jointing. Several times applicable through exchangeable knives.
Noise reduced design with noise reduction of up to 5 dB(A) and highly efficient chip collection (>95%) by DFC. Significant weight reduction through lightweight aluminium tool body.

Diamaster WhisperCut rebating cutterhead
WM 430 2 01, WP 499 2

Tool Type	ABM mm	QAL	Z	ID
Cutterhead	70.53x55x20	DP	3x5	**192275** ●
Cutterhead mounted on arbor	D70.53/SB55	DP	3x5	**192276** □

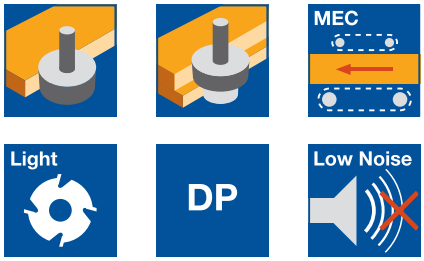


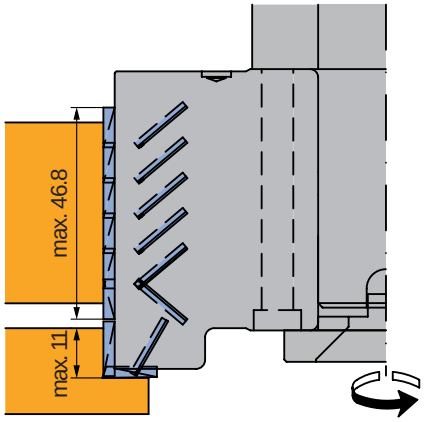
Diamaster WhisperCut rebating cutterhead

Unless stated otherwise, tools are right hand rotation.

Cutter arbor see section Clamping Systems.

Order example:
Tool set ID **192274** mounted on arbor ID **041126**, shank 25x60 mm.
In case of order select arbors with d = 20 mm and biggest clamping length of the respective type.





Diamaster WhisperCut EdgeExpert jointing and rebating cutterhead

Jointing and rebating cutterhead WhisperCut EdgeExpert

Application:
Optimized for noise reduced rebating and jointing particularly for sensitive decorative papers, foil coatings and veneers.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Chip and fibre boards (MDF etc.) raw, veneered, painted and coated; especially for plastic, paper, HPL and anti-fingerprint coatings. Also suitable for surfaces in mat, high gloss or with relief structures.

Technical information:
DP tipped cutterhead with alternate shear angle for tear-free jointing edges and cutting surface. With rebating knife for tear-free rebating edges (up to 11 mm rebating width). Increased shear angle for excellent edge quality on sensitive decorative papers, foil coatings and veneers. Noise reduced design with up to 5 dB(A) noise reduction. Significant weight reduction by using an aluminium alloy tool body. Carrier body for multiple use with exchangeable throw-away knives (not resharpenable).

Diamaster WhisperCut EdgeExpert
WP 299 2

Tool Type	ABM mm	QAL	Z	DRI	ID
Cutterhead mounted on arbor HSK-F 63	D125/SB59,8	DP	2/2	LH	**192310** □

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW

Variable angle cutterhead - turnblade design

Application:
For jointing and bevelling with adjustable bevel angle.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood and hardwood, laminated veneer lumber, plastomers, limited suitable for MDF and chipboad (uncoated or coated).

Technical information:
Knife holder swivelling adjustable from 0 - 90°. Quick and easy angle adjustment of common angles (15°, 30°, 45°, 60°) by additional locking positions in 15° steps. Free of marks cutting result due to 1-part, continuous cutting edge. Economical due to changeable tungsten carbide turnblades with two cutting edges. Optimized gullet design for improved chip removal.

Turnblade, adjustable bevel angle
WP 341 1 01

D mm	SB mm	S mm	DRI	ID
120	50	25x60	RH	**042864** ●
120	50	20x50	RH	**042865** □

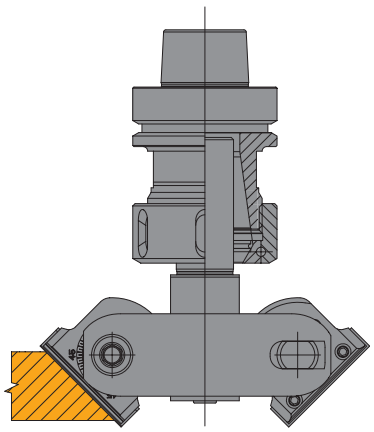
RPM: n_{max} = 11000 min^{-1}

Spare knives:

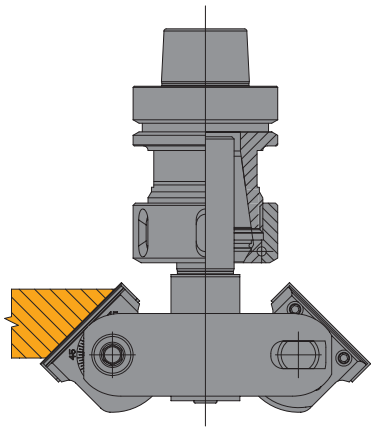
Part-no.	BEZ	ABM mm	QAL	VE PCS	ID
1	Turnblade knife	50x12x1.5	HW-05F	10	**005086** ●

Spare parts:

Part-no.	BEZ	ABM mm	ID
2	Clamping wedge with pin	48x10.88x6	**009766** ●
3	Allen screw	M6x12	**006035**
	Allen key	SW 3	**005433** ●
	Allen key	SW 8, L 100	**005437** ●
	Setting gauge for knives	80x12x9.5	**005352** ●



Bevelling from above



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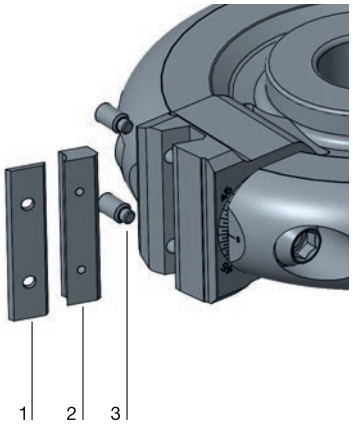


HW

Variable angle cutterhead - HeliCut

Application:
For jointing and bevelling with adjustable bevel angle.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood and hardwood, laminated veneer lumber, plastomers, technical foams (XPS, PU), limited suitable for MDF and chipboard (uncoated or coated).

Technical information:
Knife holder can be swivelled steplessly on both sides from 0 - 65°. Quick and easy adjustment of conventional angles (15°, 30°, 45°, 60°) due to additional locking positions in 15° steps. Design with divided cutting edges and optimized gullet areas for low-noise working with low cutting pressure even at high cutting performance. Workpiece edges free of tear-out on both sides even in critical materials due to alternating shear angle. Cutting edges with particularly precise geometry and polishing for long tool life and machining of „soft“ materials. Economical due to partially exchangeable solid carbide blades with 4 cutting chamfers.

HeliCut, adjustable bevel angle
WP 341 1 01

D mm	SB mm	S mm	DRI	ID
120	55	25x60	RH	**042859** ●
120	55	20x50	RH	**042863** □

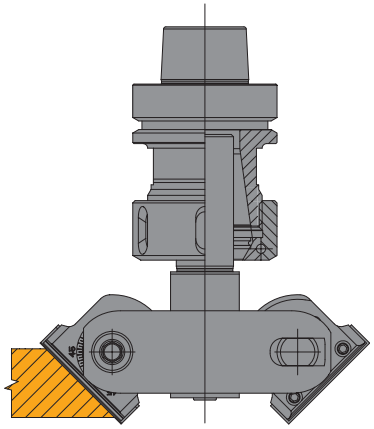
RPM: n_{max} = 11000 min^{-1}

Spare knives:

Part-no.	BEZ	ABM mm	ID
1	Turnblade knife	15x15x2.5	**009543** ●

Spare parts:

Part-no.	BEZ	ABM	ID
2	Countersink screw, Torx® 20	M5x12	**007898** ●
	Torx® key	Torx® 20	**006091** ●
	Allen key	SW 8, L 100	**005437** ●



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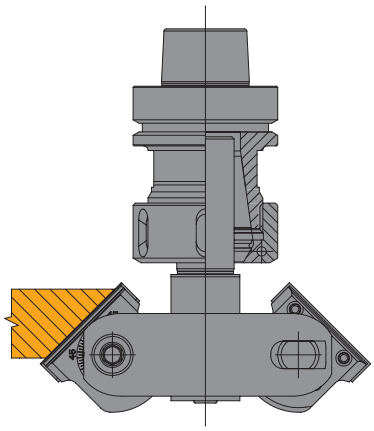
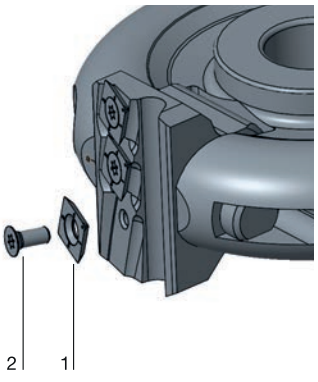


Bevelling from below



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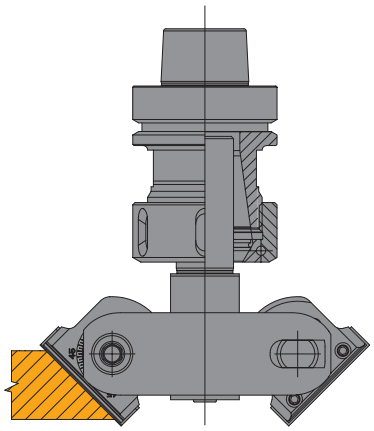
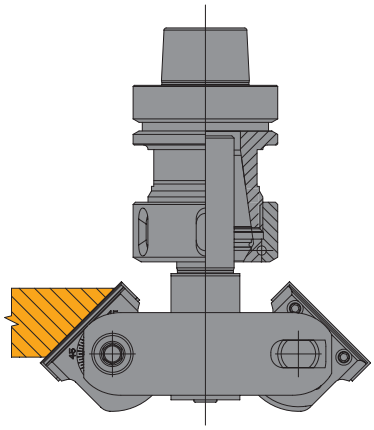


Bevelling from above



Bevelling from below

Variable angle cutterhead - WhisperCut

Application:
For jointing and bevelling with adjustable bevel angle.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Hardwood, chip and fibre board (chipboard, MDF, HDF etc.), plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), solid surface material (Corian, Varicor etc.), fibre reinforced plastics (GRP, CFRP).

Technical information:
Knife holder swivelling adjustable from 0 - 65°. Quick and easy angle adjustment of common angles (15°, 30°, 45°, 60°) by additional locking positions in 15° steps. Workpiece edges tear-free on both sides due to alternatinv shear angle. Economical due to partial change of diamond cutting edges. Noice reduced design with optimized gullet design for improved chip removal.

WhisperCut, adjustable bevel angle
WP 341 1 01

D mm	SB mm	S mm	DRI	ID
120	55	25x60	RH	**042860** ●
120	55	20x50	RH	**042866** □

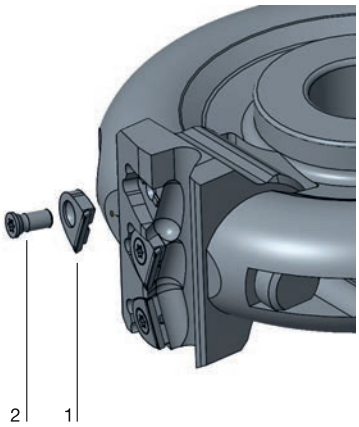
RPM: n_{max} = 11000 min^{-1}

Spare knives:

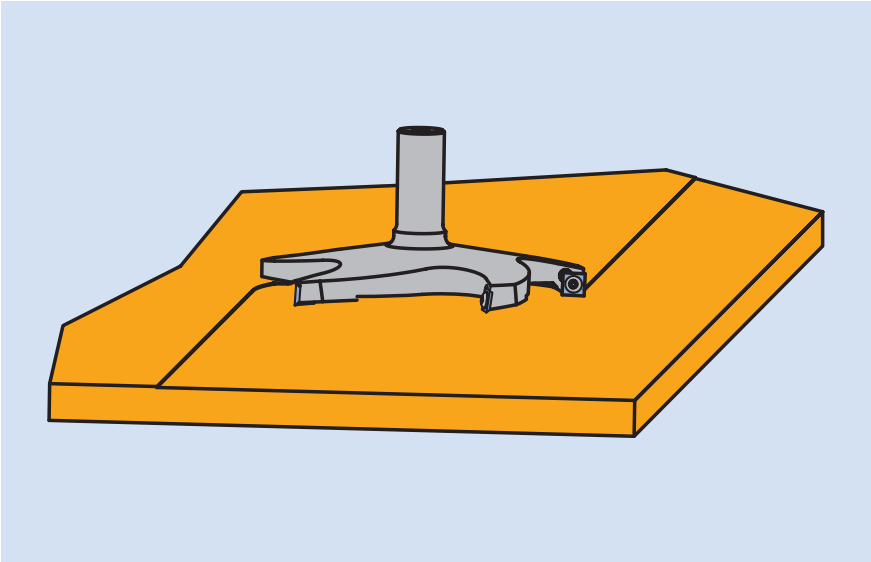
Part-no.	BEZ	ABM mm	ID
1	WhisperCut-knife SB14	14x14.2x4.3	**091074** ●

Spare parts:

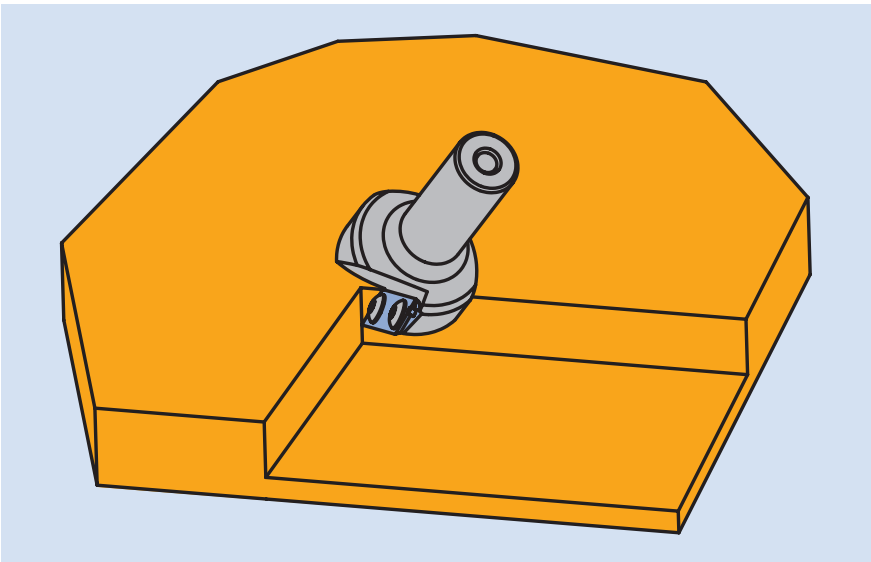
Part-no.	BEZ	ABM mm	ID
2	Countersink screw, Torx® 20/59°	M5x11.5	**007899** ●
	Torx® key	Torx® 20	**006091** ●
	Allen key	SW 8, L 100	**005437** ●



Working step/Application	Face milling, finish cutting.
Workpiece material [recommended cutting material]	Softwood and hardwood [HW]. Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc. [HW, DP]. Duromers [HW, DP]. Plastomers [HW, DP]. Solid surface material (Corian, Varicor etc.) [HW, DP].
Machine	Stationary routers with/without CNC control. Milling machines with spindles to mount shank tools.
Operation	For conventional and climb cut operations, limited chip removal.

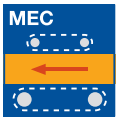


Face milling



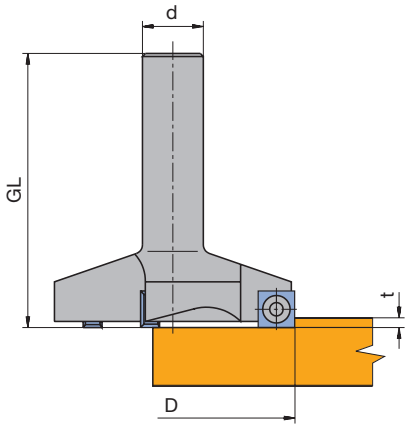
Finish cutting

Application parameters	**RPM/feed speed** The recommended RPM and feed speeds are detailed in the diagrams next the tool tables.
Information	Smooth cutting results can only be achieved with tools having a continuous cutting edge. In order to obtain a score-free finish during face milling, the machine spindle must be exactly vertical to the machine table. The larger the diameter of the planing cutter, the higher the risk of scoring and tool marks on the workpiece surface due to angular misalignment.
Workpiece clamping	Sufficient workpiece clamping is very important on stationary machines. Insufficient clamping can reduce both the cut quality and tool life considerably. Panels can be held in place with vacuum clamping, but sometimes additional mechanical clamping is required. Small and arched workpieces in particular require special jigs or clamping devices which must be made by the customer or sourced from specialist suppliers.



HW

Example



t = 0.5 - 10 mm

Surface planing of MDF spoilboards in nesting applications:
t = 0.5 - 1.5 mm
ID **041557** n = 8400 min^{-1}
v_f = 25 - 40 m min^{-1}

Planing cutter - turnblade design HeliPlan

Application:
For surface planing of large workpieces and for cutting wide rebates in one operation.

Machine:
Stationary routers with/without CNC control, machining centres.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.).

Technical information:
Cutting edge with shear angle; reversible and replaceable knives. D 135 and D 180 particularly suitable for planing MDF spoilboards in nesting applications. Excellent cutting result through optimized cutting geometry.

HW, Z 3, Z 4, Z 5
WL 400 2 01

D mm	GL mm	NL mm	S mm	Z	n_{max} min^{-1}	DRI	ID
80	90	15	20x50	3	14000	RH	**041554** ●
80	100	15	25x60	3	14000	RH	**041555** ●
135	90	15	25x60	4	10000	RH	**041556** ●
180	90	15	25x60	5	8400	RH	**041557** ●

Spare knives:

BEZ	ABM mm	QAL	VE PCS	ID
Turnblade knife	15x15x2.5	HW	10	**009535** ●

Spare parts:

BEZ	ABM mm	ID
Countersink screw, Torx® 20	M5x9	**114049** ●
Torx® key	Torx® 20	**006091** ●

● available ex stock
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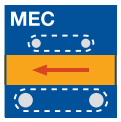
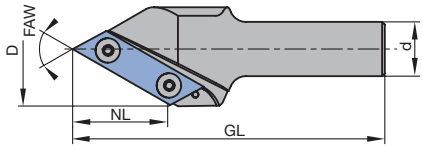
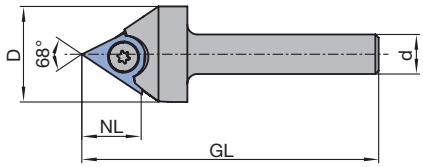


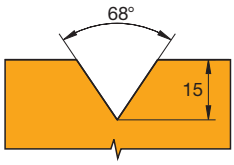
HW



V-groove cutter



V-groove cutter 68° (ID **042932**)



V-groove cutter in turnblade design with point 68° (ID **042932**)

Turnblade finishing cutter, Z 1

Application:
For machining V-groove profiles and for multi-purpose carving operations (decorative groove, 90° corner etc.).

Machine:
Stationary routers with/without CNC-control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutterhead with exchangeable turnblades. 2 or 3 (ID **042932**) performance times through turning the knife. Extra long design (ID **042937**) particularly suitable for carving operations on 5-axes machines.

HW, Z 1
WL 300 2

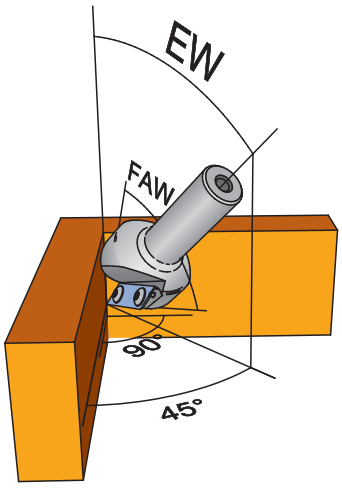
D mm	GL mm	NL mm	S mm	FAW °	Z	P	DRI	ID
29	90	18	12x58	68°	1	1	RH	**042932** ●
35	125	42	20x50	45°	1	2	RH	**042933** ●
42	115	35	20x50	60°	1	3	RH	**042934** ●
42	180	35	20x50	60°	1	3	RH	**042937** ●
54	100	27	20x50	90°	1	4	RH	**042935** ●
54	100	27	20x50	91°	1	5	RH	**042936** ●

Spare knives:

BEZ	ABM mm	P	QAL	ID
Turnblade knife triangular	19x19x2	1	HW	**009528** ●
Turnblade knife	59x12x1.5	2	HW	**602503** ●
Turnblade knife	49x12x1.5	3	HW	**602502** ●
Turnblade knife	39x12x1.5	4/5	HW	**602501** ●

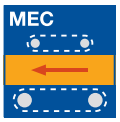
Spare parts:

BEZ	ABM mm	P	ID
Countersink screw, Torx® 20	M5x5	1	**007445** ●
Oval head screw Torx® 15	M4x5	2-5	**007038** ●
Torx® key	Torx® 20	1	**117520** ●
Torx® key	Torx® 15	2-5	**005457** ●



Determination of the adjustment angle EW depending on the bevel angle FAW while finish cutting 90° internal corners.

FAW		EW
45°	=	32.77°
60°	=	45.00°
68°	=	52.26°



DP

DP V-grooving cutter for composite panels

Application:
Routers for cutting V-grooves in composite panels for folding works.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Composite panels based on thermoplastic cores with aluminium coverage on both sides (e.g. Alucobond®, Dibond® etc.).

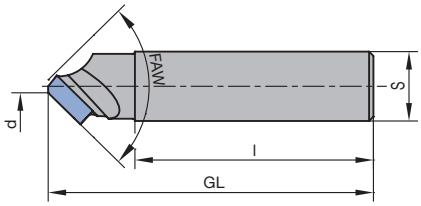
Technical information:
DP edge with shear angle. Resharpenable 3 to 5 times with normal wear.

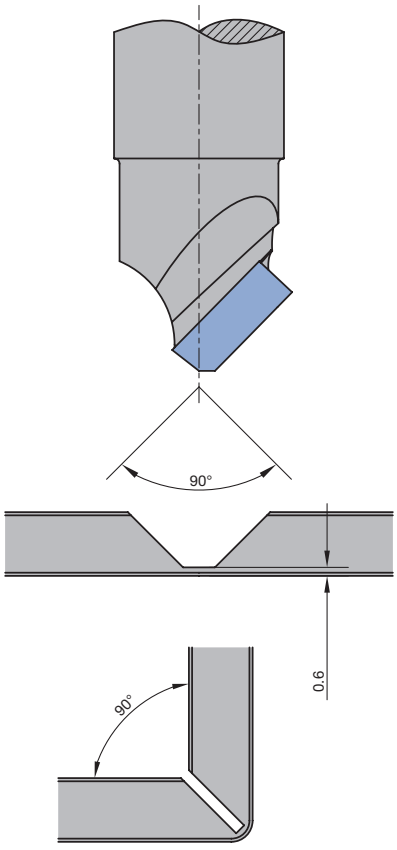
DP, Z 1
WO 311 2

D mm	d mm	NL mm	S mm	FAW °	DRI	ID
18	3	7.5	16x55	90°	RH	**191100**
20	2	3.7	16x55	135°	RH	**191106**

RPM: n = 18000 - 24000 min^{-1}

Application example:





Production of folding corners on composite panels.

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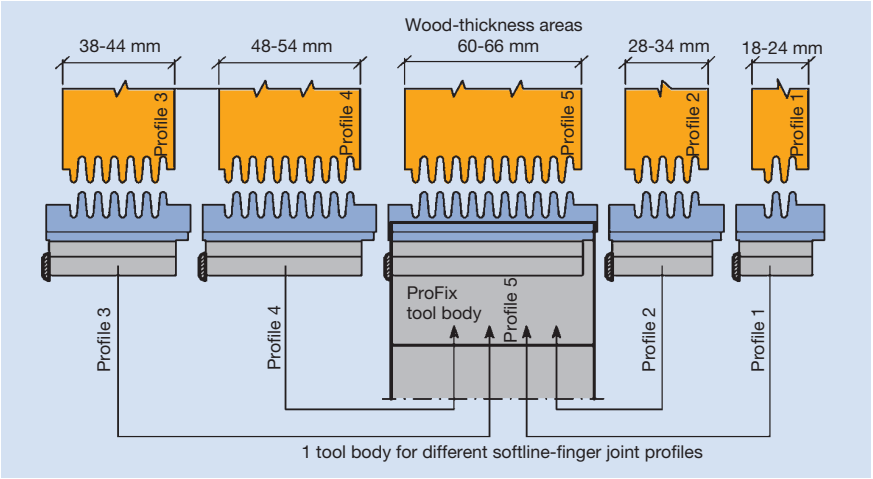
ProFix F cutterhead PF 25-15°

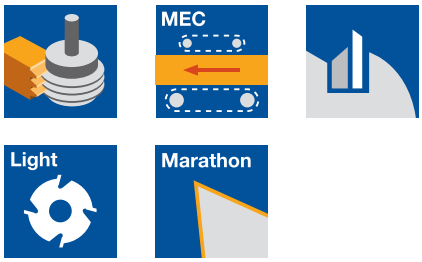


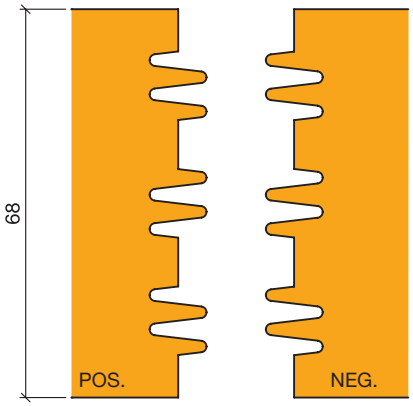
Working step/Application	For machining self-locking longitudinal joints for exactly measured workpieces, e.g. constructional finger joints, window and door profiles, mitred frames, arched joints, stair, furniture and shelf parts.
Cutting material	HS, HW (quality according to machined material).
Machine	Stationary routers with/without CNC, milling machines with spindles to mount tools with bore.
Tool design	ProFix tool body with bore for mounting on arbors. For ProFix finger joint knives without shear angle and with straight clearance.
RPM D_0 = diameter of the tool body	D_0 = 80 mm, n_{max} = 11000 min^{-1}. D_0 = 100 mm, n_{max} = 9000 min^{-1}.
Resharpening area	PF 25 = 4.5 mm.
Number of teeth/Cutting with	Z 2, SB max. = 80 mm.
Feed speed	Depends on the RPM, maximum 18 m min^{-1}.

	f_z [mm]
Softwood	0.30 – 0.40
Hardwood	0.40 – 0.50

$v_f = f_z \cdot n \cdot Z/1000$

Technical features	Tool body for resharpenable HS- or HW profile knives. Constant profile/diameter after resharpening. New and resharpened knives are always positioned and clamped at constant diameter by the ProFix clamping system. – Form and force knife clamping. – Knife clamping screws positioned behind the cutting edge, and in the dust protected area. – One tool body can be used for different finger and glue joint profiles of different cutting widths. – PF 25 with profile depth 25 mm.
General information	– Simple and exact knife replacement. – No setting gauges required. – Constant profile/diameter (no correction to the machine settings required). – Ready for use immediately after knife replacement, even on the machine. – Basic clearance 0.5 mm without side clearance. – Exact fitting to the workpiece by height adjusting the position of the profile to the middle of the wood (profile symmetry = HD/2).





Positive and negative glue joint profile, combined in one tool

Profile cutterhead set - multi-purpose glue joint profile

Application:
For cutting longitudinal joints for dimensionally stable construction parts, windows and doors e.g. round arched joints, stairs and frame construction parts.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, modified timber for window construction, compound materials of solid wood and wood derived material, uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Variable wood thickness (56/56/60/68/78/90/92/106/110 mm) through cutting processes in several passes (profile splitting).

ZL 10 mm, HD 56 - 110 mm
SG 599 2 53

Tool Type	DRI	Z	ID
Glue joint cutter set, positive and negative	RH	2	**953576** □

RPM: n_{max} = 12700 min^{-1}

Single tools
WE 600 2 53

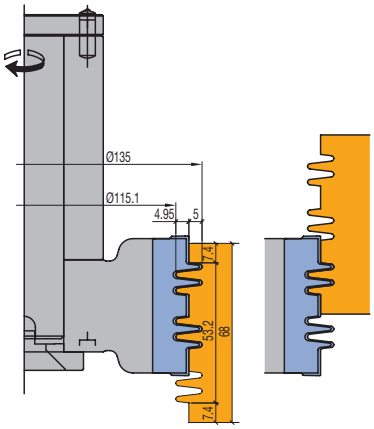
Tool Type	ABM mm	Z	ID
Profile cutterhead	135x53x30	2	**414300** ●

Spare knives:

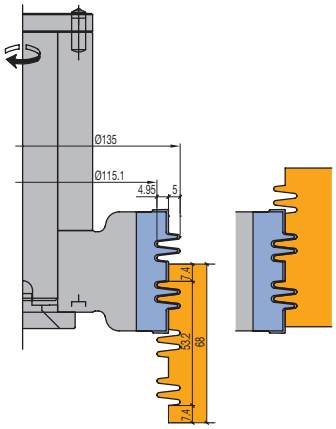
BEZ	ABM mm	QAL	ID
ProfilCut Q knife	53x20.5x2.4	MC	**413532**

Spare parts:

BEZ	ABM mm	ID
Clamping wedge profiled	48x18x8.27	**629291**
Clamping screw w. disc, Torx® 25	M6x18.5	**007442** ●
Torx® key	Torx® 25	**117504** ●



Glue joint profile positive, wood thickness 68 mm



Glue joint profile negative, wood thickness 68 mm

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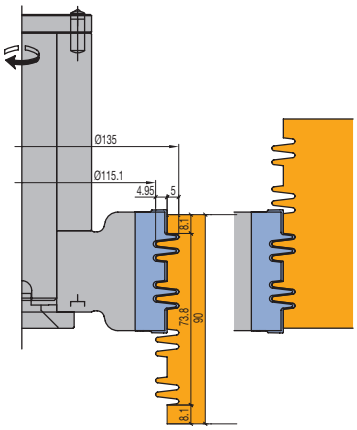
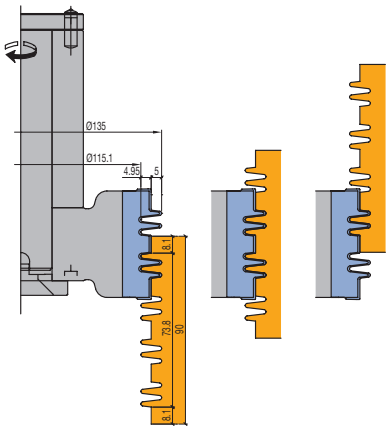


Glue joint profile positive, wood thickness 90 mm



Glue joint profile negative, wood thickness 90 mm

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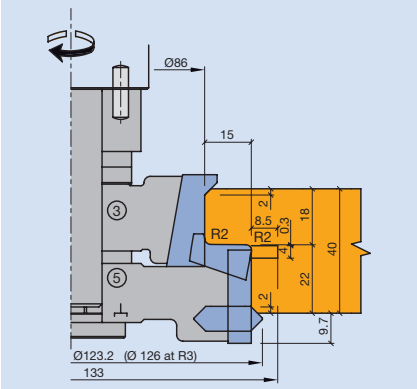
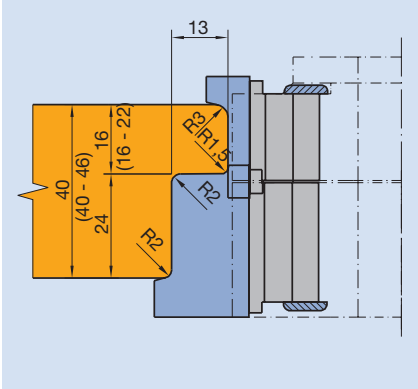
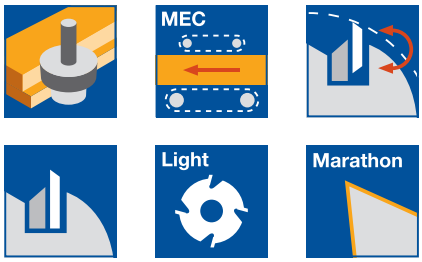
Working step/Application	Profiling and rebating of internal doors.
Workpiece material	Softwood, hardwoods glulam, HDF coated or veneered.
Machine	Stationary routers and machining centres.
Profile cutterset for profiling and rebating internal doors Z 2	
Important ordering data	With adjustable cuttersets the depth of the rebate is set by the profile –> see profiles below. The same tool can machine doors of different thickness, but the rebate depth is constant.
Profile examples	

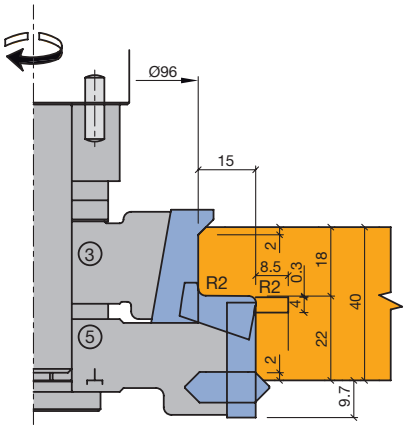


ID **426093**
Rebate depth 15 mm
Rebate width 22 mm
Turnblade knife tool set

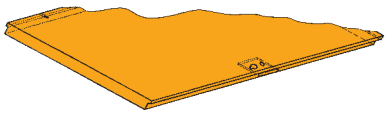


ID **023538** – P 1
Rebate depth 13 mm
Rebate width 24 mm
ProFix tool set





Example



ID **008270** = R 3 ID **008275** = R 3
ID **008307** = R 2
ID **008272** = R 1.5

ID **008271** = R 3

Profile cutterhead set ProfilCut Q - door processing

Application:
For profiling and rebating internal single rebate doors, rebate depth 15 mm.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, compound materials of solid wood and wood derived materials, uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Variable profile overlap by exchange profile edging knives.
Adjustable rebate dimensions: rebate width 22 mm, rebate depth 15 mm.
Seal groove profile by mounting grooving knives SB 4 mm. Constant tool diameter.

Single rebate 15 mm
SE 540 2 53, SG 599 2 53, WE 500 2 53

Tool Type	ABM mm	Tool no.	Z	ID
Profile cutterhead	104x30x20	3	2	**125270**
Profile cutterhead	126.2x35x20	5	2	**125271**
Tooling set with spacers, without arbor	126.2,d20,2-part	3/5	2	**126067**
Tool set mounted on arbor	D_0=96;D=126.2; 2-part	3/5	2	**426093**

RPM: n_{max} = 13600 min^{-1}

Unless stated otherwise, tools are right hand rotation.
Cutter arbor see section Clamping Systems.

Spare knives:

Part-no.	BEZ	ABM mm	Tool no.	R mm	FAW °	QAL	VE PCS	ID
1	ProfilCut Q knife	30.2x14.1x2	3		45°	MC		**619334**
1	ProfilCut Q knife	30.2x14.2x2	3	1.5		MC		**619335**
1	ProfilCut Q knife	30.2x14.21x2	3	2		MC		**619336**
1	ProfilCut Q knife	30.2x14.22x2	3	3		MC		**619337**
1	ProfilCut Q knife	30.2x15.3x2	3	4		MC		**619338**
1	ProfilCut Q knife	30.2x15.31x2	3	5		MC		**619339**
1	ProfilCut Q knife, flute	30.2x14.1x2	3	3		MC		**619340**
1	ProfilCut Q knife	20.1x12.61x2	5	2		MC		**413046**
2	Turnblade knife	30x8x1.5	5			HW-05	10	**005059** ●
3	Edging knife	KM 11/0	5		45°	HW-F		**008268** ●
4	Turnblade grooving knife NA4	35.2x15x4	5			HW-F		**008317** ●

● available ex stock
□ available at short notice
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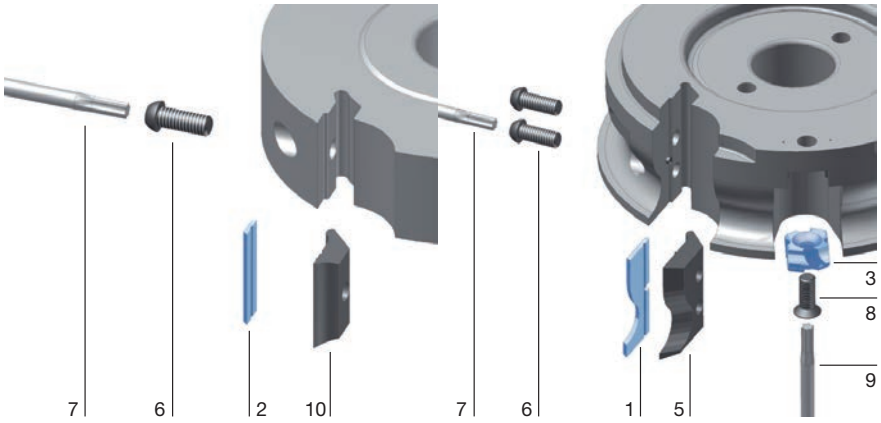
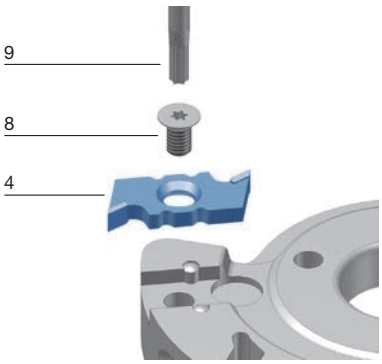
Spare parts:

Part-no.	BEZ	ABM mm	Tool no.	ID
5	Clamping wedge ProfilCut Q	28x20x8.27	3	**629208**
5	Clamping wedge profiled	18x24.9x8.27	5	**629268**
6	Clamping screw w. disc, Torx® 25	M6x18.5		**007442** ●
7	Torx® key	Torx® 25		**117504** ●
8	Countersink screw, Torx® 20	M6x0.5x4.9		**006243** ●
9	Torx® key	Torx® 20		**117503** ●
10	Clamping wedge	28x18.75x8.27	5	**009673** ●
	Magnetic setting gauge	0.3/0.8		**005376** ●





Working step/Application	Panel raising profiles.
Workpiece material	Softwood, hardwood and composite materials (HDF coated or veneered).
Machine	Stationary routers and machining centres.

Panel raising profile cutterset Z 2/2

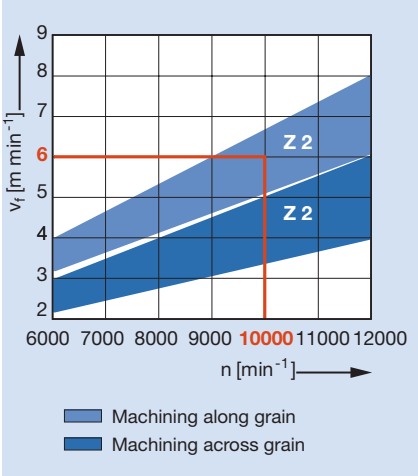
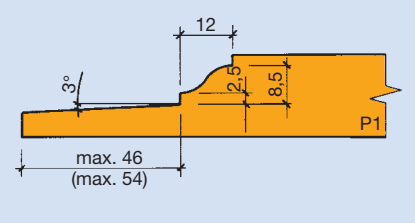
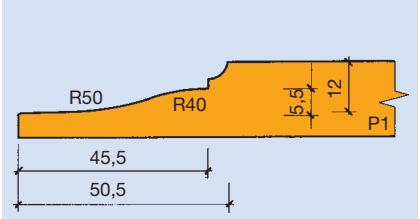
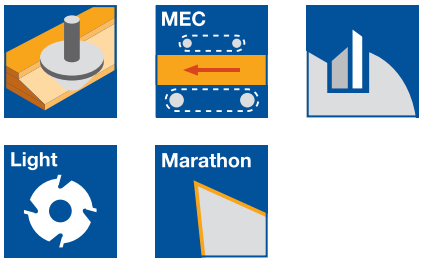


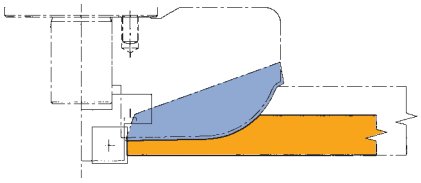
Diagram to determine feed speed v_f depending on RPM and direction of cut when machining solid wood panels (panel raising).

Profile examples

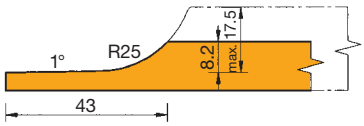








Example



Profile cutterhead set ProfilCut Q - Panel raising

Application:
For panel raising profiles for framed doors, ceilings, wall coverings etc.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
Panel edge jointing by mounting an additional jointing cutterhead ID **041221**. Cutterhead with changeable knives and shear angle.

Panel raising depth max. 49 mm
SG 599 2 53, TR 811 0, WE 550 2 53

Tool Type	ABM mm	Z	n_{max} min^{-1}	ID
Cutterhead	132x43x20	2	11600	**125273**
Cover plate	46x9.5x20			**007925**
Cutterhead mounted on arbor	1-part			**426095**

Unless stated otherwise, tools are right hand rotation.
Cutter arbor see section Clamping Systems.

Spare knives:

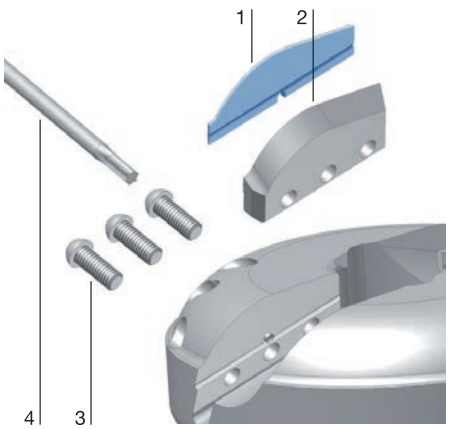
Part-no.	BEZ	ABM mm	QAL	VE PCS	ID
	Turnblade knife	12x12x1.5	HW-05F	10	**005081** ●
1	ProfilCut Q knife	60x20.47x2	MC		**619343**

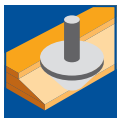
Spare parts:

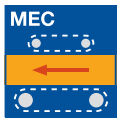
Part-no.	BEZ	ABM mm	ID
2	Clamping wedge profiled	57x28.97x7.25	**629255**
3	Clamping screw w. disc, Torx® 25	M6x18.5	**007442** ●
4	Torx® key	Torx® 25	**117504** ●
	Oval head screw Torx® 15	M4x6	**006225** ●
	Torx® key	Torx® 15	**117507** ●

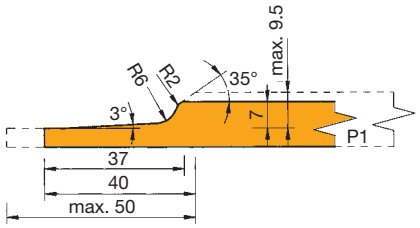
Jointing
WW 200 2 NN

Tool Type	ABM mm	QAL	Z	ID
Jointing cutterhead	30/46x12/22.5x20	HW	2	**041221**

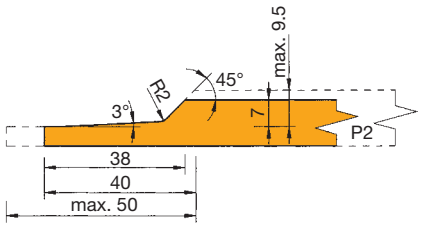




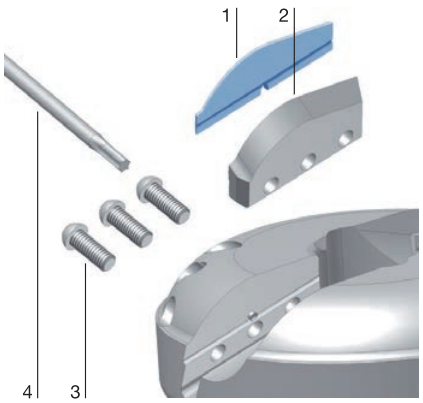




P1



P2



Profile cutterhead set ProfilCut Q - Panel raising

Application:
For panel raising profiles for framed doors, ceilings, wall coverings etc.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
Panel edge jointing by mounting an additional jointing cutterhead ID **041221**. Cutterhead with changeable knives and shear angle. Profile can be changed by replacing the knives.

Panel raising depth max. 40 / 50 mm with/without jointing
SG 599 2 53, TR 811 0, WE 550 2 53

Tool Type	P	ABM mm	QAL	Z	n_{max} min^{-1}	ID
Cutterhead	1	110x40/40x20	MC	2	13800	**125274** ●
Cover plate		46x9.5x20				**007925**
Cutterhead mounted on arbor		1-part	MC			**426096** □

Unless stated otherwise, tools are right hand rotation.
Cutter arbor see section Clamping Systems.

Spare knives:

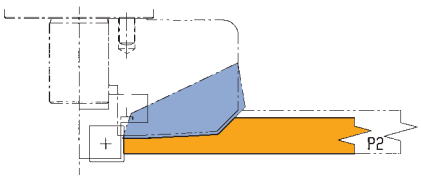
Part-no.	BEZ	P	ABM mm	QAL	VE PCS	ID
	Turnblade knife		12x12x1.5	HW-05F	10	**005081** ●
1	ProfilCut Q knife	1	50x14.5x2	MC		**619344**
1	ProfilCut Q knife	2	50x14.56x2	MC		**619345**

Spare parts:

Part-no.	BEZ	ABM mm	ID
2	Clamping wedge profiled	47x23x7.25	**629256**
3	Clamping screw w. disc, Torx® 25	M6x18.5	**007442** ●
4	Torx® key	Torx® 25	**117504** ●
	Oval head screw Torx® 15	M4x6	**006225** ●
	Torx® key	Torx® 15	**117507** ●

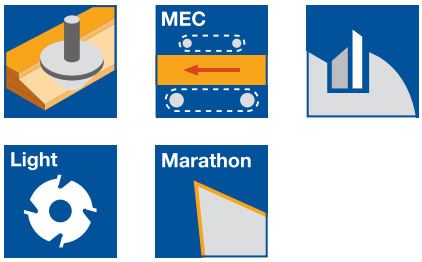
Jointing
WW 200 2 NN

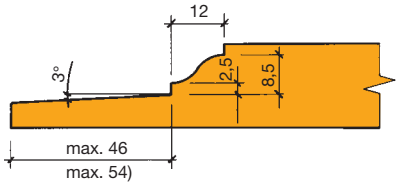
Tool Type	ABM mm	QAL	Z	ID
Jointing cutterhead	30/46x12/22.5x20	HW	2	**041221**



Example

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

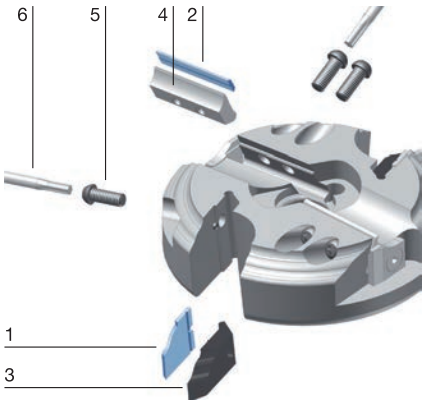




P1

P2 P3

P4 P5



Profile cutterhead set ProfilCut Q - Panel raising

Application:
For panel raising profiles for framed doors, ceilings, wall coverings etc.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
Panel edge jointing by mounting an additional jointing cutterhead ID **041221**. Cutterhead with changeable knives and shear angle. Profile can be changed by replacing the knives.

Panel raising depth max. 54 mm
SG 599 2 53, TR 811 0, WE 550 2 53

Tool Type	P	ABM mm	QAL	Z	n_{max} min^{-1}	ID
Cutterhead	1	124x20/36x20	MC	2/2	12300	**125275**
Cover plate		46x9.5x20				**007925**
Cutterhead mounted on arbor	1	1-part	MC	2/2	12300	**426097**

Unless stated otherwise, tools are right hand rotation with profile P1.
Cutter arbor see section Clamping Systems.

Spare knives:

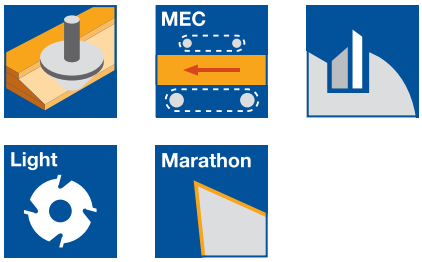
Part-no.	BEZ	P	ABM mm	QAL	VE PCS	ID
	Turnblade knife		12x12x1.5	HW-05F	10	**005081** ●
1	ProfilCut Q knife	1	20x27x2	MC		**619346**
1	ProfilCut Q knife	2	20x27x2	MC		**619347**
1	ProfilCut Q knife	3	20x27x2	MC		**619348**
1	ProfilCut Q knife	4	20x27x2	MC		**619349**
1	ProfilCut Q knife	5	20x27x2	MC		**619350**
2	Turnblade knife		40x8x1.5	HW-30F	10	**005074** ●

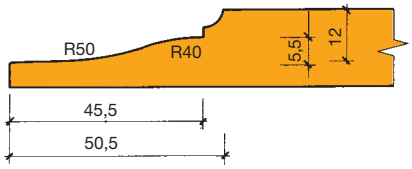
Spare parts:

Part-no.	BEZ	P	ABM mm	ID
3	Clamping wedge profiled	1-5	18x37.46x8.27	**629257**
4	Clamping wedge		37x16.8x7.25	**009577** ●
5	Clamping screw w. disc, Torx® 25		M6x18.5	**007442** ●
6	Torx® key		Torx® 25	**117504** ●
	Oval head screw Torx® 15		M4x6	**006225** ●
	Torx® key		Torx® 15	**117507** ●
	Cover plate		46x9.5x20	**007925**

Jointing
WW 200 2 NN

Tool Type	ABM mm	QAL	Z	ID
Jointing cutterhead	30/46x12/22.5x20	HW	2	**041221**



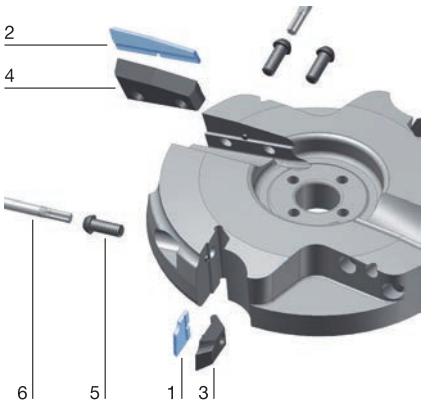


P1

P2 P3

P4 P5

Profile examples



Profile cutterhead set ProfilCut Q - Panel raising

Application:
For panel raising profiles for framed doors, ceilings, wall coverings etc.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
Panel edge jointing by mounting an additional jointing cutterhead ID **041221**. Cutterhead with changeable knives and shear angle. Profile can be changed by replacing the knives.

Panel raising depth max. 50 mm
SG 599 2 53, TR 811 0, WE 550 2 53

Tool Type	P	ABM mm	QAL	Z	n_{max} min^{-1}	ID
Cutterhead	1	131x20/36x20	MC	2/2	11600	**125276**
Cover plate		46x9.5x20				**007925**
Cutterhead mounted on arbor	1	1-part	MC	2/2	11600	**426098**

Unless stated otherwise, tools are right hand rotation with profile P1.
Cutter arbor see section Clamping Systems.

Spare knives:

Part-no.	BEZ	P	ABM mm	QAL	VE PCS	ID
	Turnblade knife		12x12x1.5	HW-05F	10	**005081** ●
1	ProfilCut Q knife	1	20x16x2	MC		**619351**
1	ProfilCut Q knife	2	20x16x2	MC		**619352**
1	ProfilCut Q knife	3	20x16x2	MC		**619353**
1	ProfilCut Q knife	4	20x16x2	MC		**619354**
1	ProfilCut Q knife	5	20x16x2	MC		**619355**
2	ProfilCut Q knife (pan.rais.)		50x11.68x2	MC		**619356**

Spare parts:

Part-no.	BEZ	P	ABM mm	ID
3	Clamping wedge profiled	1-5	18x26.46x8.27 (P1-5)	**629258**
4	Clamping wedge profiled		47x20.18x7.25 (raised panel)	**629259**
5	Clamping screw w. disc, Torx® 25		M6x18.5	**007442** ●
6	Torx® key		Torx® 25	**117504** ●
	Oval head screw Torx® 15		M4x6	**006225** ●
	Cover plate		46x9.5x20	**007925**

Jointing
WW 200 2 NN

Tool Type	ABM mm	QAL	Z	ID
Jointing cutterhead	30/46x12/22.5x20	HW	2	**041221**

● available ex stock
□ available at short notice
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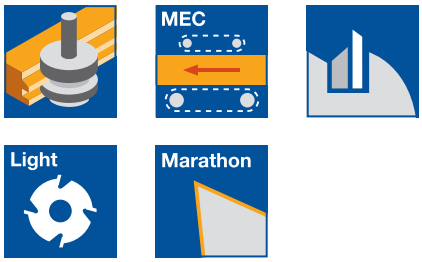

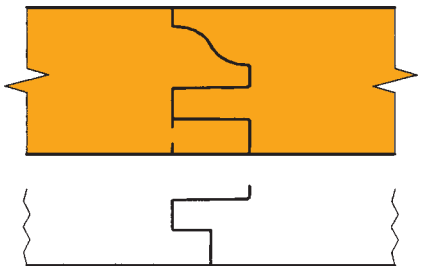

P1

P2

P3

P4

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Profile examples

Profile cutterhead set ProfilCut Q - Door frame

Application:
For profiles and counter profiles in solid wood frame furniture doors.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
3 tools with 5 profiles for single side profiled frames and inserted or beaded panels. Additional profiles by remounting the single tools.

Frame profile one side, 12 mm tongue
AG 341 2 53, SE 640 2 53

Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile set	1	2	14500	**126068**
Counter profile set	2/3	2/2	14500	**126069**
Tool set profile and counter profile mounted on arbor				**426099**

Frame profile one side, 12 mm rebate
AG 341 2 53, SE 640 2 53

Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile set	1/3	2/2	14500	**126070**
Counter profile set	2/4	2/2	14500	**126071**
Tool set profile and counter profile mounted on arbor				**426100**

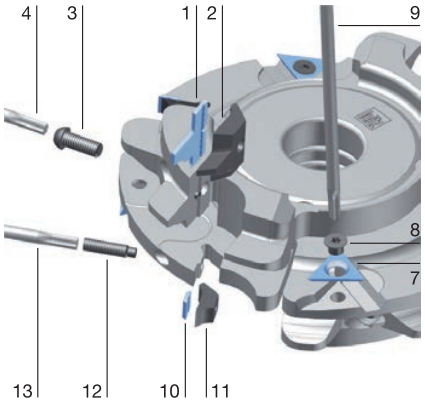
Frame profile one side, 6 mm tongue
AG 341 2 53, SE 640 2 53

Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile set	1/5	2/2	14500	**126072**
Counter profile set	2/5	2/2	14500	**126073**
Tool set profile and counter profile mounted on arbor				**426101**

Single tools
WE 500 2 53, WW 210 2, WW 410 2 NN

Tool Type	ABM mm	Tool no.	Z	ID
Profile cutterhead	109.1x30x20	1	2	**125277**
Profile cutterhead	109.0x20x20	2	2	**125278**
Rebating cutterhead	109.0x15x20	3	Z2/V2	**023970**
Jointing cutterhead	85x15x20	4	2	**023971**
Rebating cutterhead	97x15x20	5	Z2/V2	**023972**

Cutter arbor see section Clamping Systems.
Tools supplied with profile 1 unless ordered otherwise.

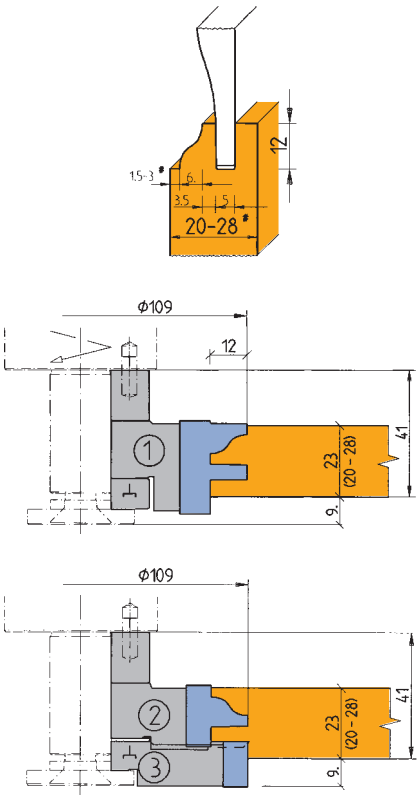


Spare knives:

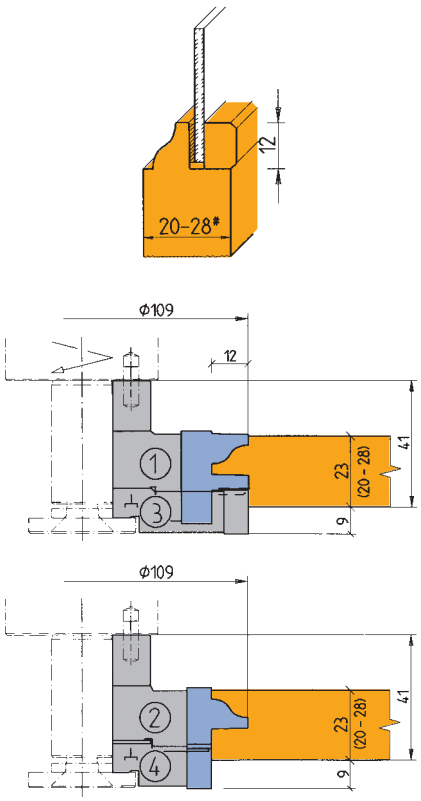
Part-no.	BEZ	ABM mm	P	Tool no.	QAL	VE PCS	ID
1	ProfilCut Q knife	30x23.2x2	1	1	MC		**619357**
1	ProfilCut Q knife	30x23.2x2	2	1	MC		**619358**
1	ProfilCut Q knife	30x23.2x2	3	1	MC		**619359**
1	ProfilCut Q knife	30x23.2x2	4	1	MC		**619360**
1	ProfilCut Q knife	30x23.2x2	5	1	MC		**619361**
1	ProfilCut Q knife	20x23x2	1	2	MC		**619362**
1	ProfilCut Q knife	20x23x2	2	2	MC		**619363**
1	ProfilCut Q knife	20x23x2	3	2	MC		**619364**
1	ProfilCut Q knife	20x23x2	4	2	MC		**619365**
1	ProfilCut Q knife	20x23x2	5	2	MC		**619366**
7	Turnblade spur VS2	19x19x2		3/5	HW-F	10	**005115** ●
10	Turnblade knife	14.7x8x1.5		3-5	HW-30F	10	**005070** ●

Spare parts:

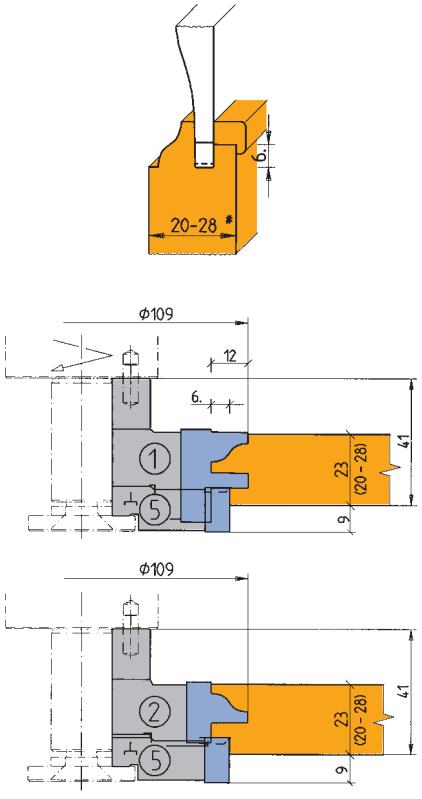
Part-no.	BEZ	ABM mm	P	Tool no.	ID
2	Clamping wedge profiled	28x29x8.27	1-5	1	**629260**
2	Clamping wedge profiled	18x29x8.27	1-5	2	**629261**
3	Clamping screw w. disc, Torx® 25	M6x18.5			**007442** ●
4	Torx® key	Torx® 25			**117504** ●
8	Countersink screw, Torx® 20	M5x8.5			**007808** ●
9	Torx® key	Torx® 20			**117503** ●
11	Clamping wedge	13x18.75x8.27		3-5	**009670** ●
	Magnetic setting gauge	0.3/0.8			**005376** ●



Tongue 12 mm, inserted panel



Rebate 12 mm, beaded panels



Tongue 6 mm, inserted and beaded panels

● available ex stock
□ available at short notice
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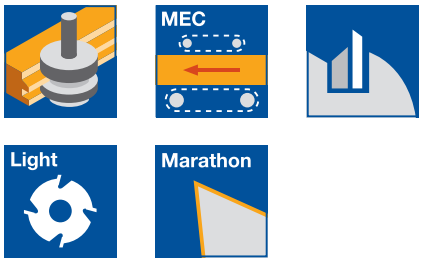
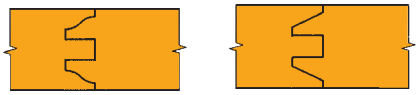
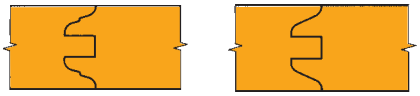




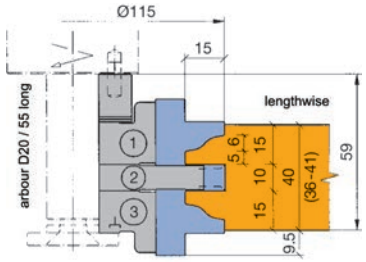
P1 P2



P3 P4

P5

Profiles



Frame profiled on two sides - longitudinal profile

Profile cutterhead set ProfilCut Q - Door frame

Application:
For profiles and counter profiles in solid wood frame furniture doors.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
Tools with 5 profiles for double sided profiled frames and inserted or beaded panels. Additional tools available for changing from frames with profiles on both sides to frames with profiles on one side.

Frame profile two sides, 15 mm tongue
AG 341 2 53, SE 640 2 53

Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile set	1/2/3	Z2/V2	13200	**126074**
Counter profile set	1/3	Z2	13200	**126075**
Tool set profile and counter profile mounted on arbor				**426102**

Frame profile one side, 15 mm rebate
AG 341 2 53, SE 640 2 53

Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile set	3/5	Z2/V2	13200	**126076**
Counter profile set	1/4	Z2	13200	**126077**
Tool set profile and counter profile mounted on arbor				**426103**

Frame profile two sides, 15 mm tongue, profile and counter profile
SE 640 2 53, SG 699 2 53

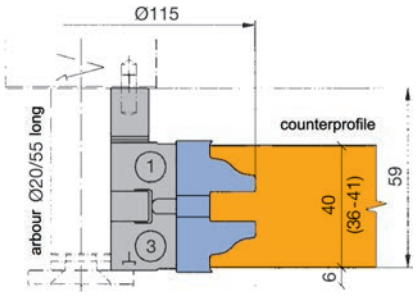
Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile and counter profile set	3/1/2/3	Z2/V2	13200	**126078**
Tool set profile and counter profile mounted on arbor			13200	**426104**

Additional tool (conversion from tongue 15 mm to rebate 15 mm)
WW 211 2, WW 410 2 NN

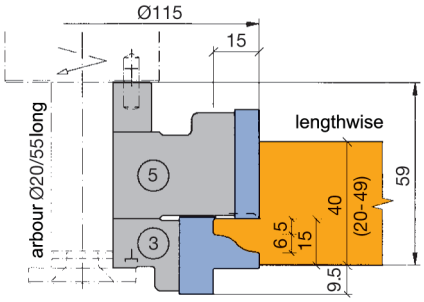
Tool Type	Tool no.	Z	n_{max} min^{-1}	ID
Profile	5	Z2/V2	13200	**125032**
Counter profile	4	2	13200	**023085** ●

Cutter arbor see section Clamping Systems.

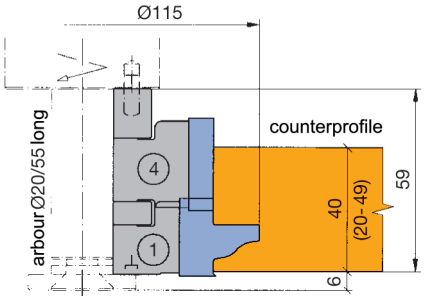
Wood thickness:
Frame profile two sides HD 36 - 41 mm
Frame profile one side HD 20 - 49 mm



Frame profiled on two sides - counter profile



Frame profiled on one side - longitudinal profile



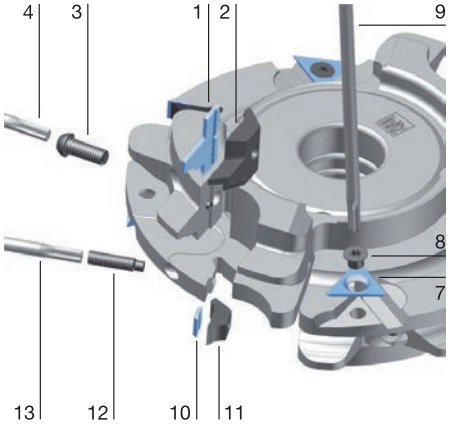
Frame profiled on one side - counter profile

Spare knives:

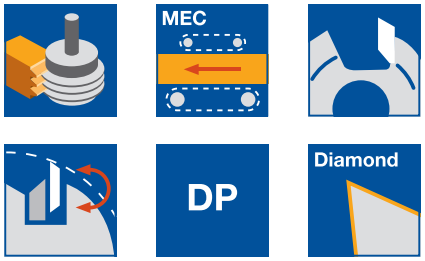
Part-no.	BEZ	ABM mm	P	Tool no.	QAL	VE PCS	ID
1	ProfilCut Q knife	25x27x2	1	3	MC		**619291**
1	ProfilCut Q knife	25x27x2	2	3	MC		**619292**
1	ProfilCut Q knife	25x27x2	3	3	MC		**619293**
1	ProfilCut Q knife	25x27x2	4	3	MC		**619294**
1	ProfilCut Q knife	25x27x2	5	3	MC		**619295**
1	ProfilCut Q knife	25x27x2	1	1	MC		**619296**
1	ProfilCut Q knife	25x27x2	2	1	MC		**619297**
1	ProfilCut Q knife	25x27x2	3	1	MC		**619298**
1	ProfilCut Q knife	25x27x2	4	1	MC		**619299**
1	ProfilCut Q knife	25x27x2	5	1	MC		**619300**
7	Turnblade spur VS2	19x19x2		2	HW-F	10	**005115** ●
10	Turnblade knife	9.7x8x1.5		5	HW-30F	10	**005197** ●
10	Turnblade knife	35x8x1.5		4	HW-30F	10	**005073** ●
10	Turnblade knife	30x8x1.5		2/5	HW-30F	10	**005072** ●

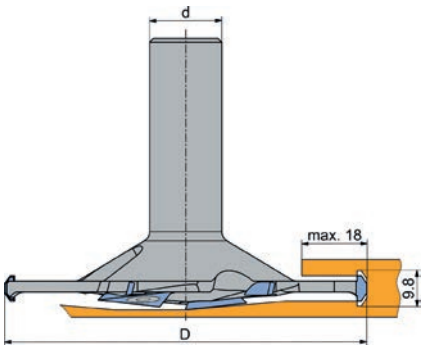
Spare parts:

Part-no.	BEZ	ABM mm	Tool no.	ID
2	Clamping wedge profiled	23x30x8.27	3	**629237**
2	Clamping wedge profiled	23x30x8.27	1	**629238**
3	Clamping screw w. disc, Torx® 25	M6x18.5		**007442** ●
4	Torx® key	Torx® 25		**117504** ●
8	Countersink screw, Torx® 20	M6x0.5x4.9		**006243** ●
9	Torx® key	Torx® 20		**117503** ●
11	Clamping wedge	9x18.75x8.27	2	**009764** ●
11	Clamping wedge	28x18.75x8.27	4	**009673** ●
11	Clamping wedge	33x18.75x8.27	5	**009674** ●
12	Allen screw with shank, Torx® 15	M5x20		**007380** ●
13	Torx® key	Torx® 15		**117507** ●
	Magnetic setting gauge	0.3/0.8		**005376** ●



● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org





Profile cutter for Clamex® P-System® connector

Profile cutter Lamello® Clamex® P-System®

Application:
Router for milling the profile groove for Lamello® Clamex® P-System® connectors on nesting machines made by Holz-Her.

Machine:
Routing machines with CNC control, machining centres.

Workpiece material:
Chipboard and fibre materials (chipboard, MDF, HF etc.), raw, plastic-coated, veneered etc., glued wood and laminated wood (plywood, Multiplex etc.).

Technical information:
Profile and basic cutting edges in PCD, boring edges in reversible knife design with diamond coating. For use exclusively on Holz-Her machines with existing software module (subject to licence). Not resharpenable.

Z 2+2 / 1+1
WO 532 2

D mm	GL mm	NL mm	S mm	DRI	ID
100.4	75	7	20x53	RH	**191127** ●

RPM: n_{max} = 18000 min^{-1}

Drill for access hole D = 6 mm: ID 034116.

Spare knives:

BEZ	ABM mm	QAL	ID
Turnblade spur	19x19x2	DP*	**006607** ●

DP* = Diamond coating

Spare parts:

BEZ	ABM mm	ID
Countersink screw Torx® 20	M5x6	**114050** ●
Torx® key	Torx® 20	**117520** ●

Working step/Application

Profiling (jointing, bevelling, rounding, panel raising and decorative grooves).

Workpiece material [recommended cutting material]

Softwood and hardwood [HS, HW].
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc. [HW].
Plywood [HW].
Duromers [HW].
Plastomers [HS, HW].
Solid surface material (Corian, Varicor etc.) [HW].
Decorative laminates (HPL-compact laminate, Trespa etc.) [HW].
Non-ferrous metal (Aluminium, copper etc.) [HS, HW].

Machine

Stationary routers with/without CNC control, CNC machining centres.
Milling machines with spindles to mount shank tools.

Operation

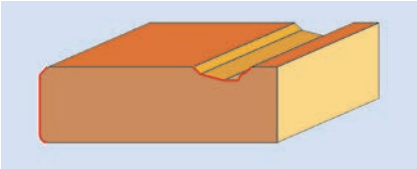
For conventional and climb cut operations.

Recommendation

Solid wood along grain: climb cut.
Solid wood across grain: conventional cut.

Technical features

Cutterhead with replaceable and shapeable knives or ProfilCut Q system cutterheads for machining panels and decorative grooves.



Example

Application parameters

RPM/feeds
Recommended cutting speeds v_C and chip load f_z for multi-purpose cutterheads.

	Cutterhead HS v_c [m/s]	**Cutterhead HW v_c [m/s]**
Softwood	50 – 80	60 – 90
Hardwood	40 – 60	50 – 80
Chipboard/MDF	–	60 – 80
Plywood	–	60 – 80
Plastic coated board	–	40 – 60

	Cutterhead HS/HW f_z [mm]
Solid wood along grain	0.3 – 0.5
Solid wood across grain	0.25 – 0.35
Chipboard/MDF	0.3 – 0.5
Plywood	0.25 – 0.35

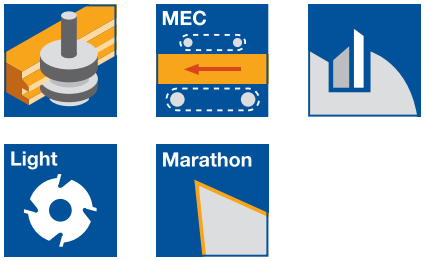
Calculation formula: $v_f = f_z \cdot n \cdot Z / 1000$

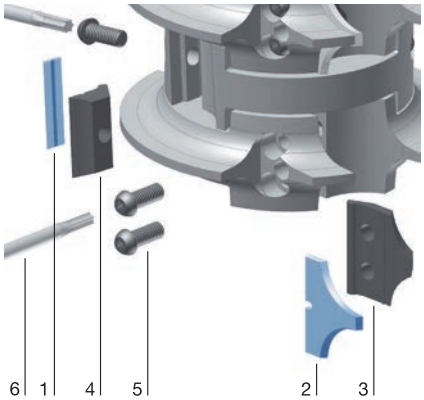
Workpiece clamping

Sufficient workpiece clamping is very important on stationary machines.

Insufficient clamping can reduce both the cut quality and tool life considerably. Panels can be held in place with vacuum clamping, but sometimes additional mechanical clamping is required.

Small and arched workpieces in particular require special jigs or clamping devices which must be made by the customer or sourced from specialist suppliers.





Profile cutterhead set ProfilCut Q

Application:
Multi-purpose tool set for bevelling and rounding, optional jointing of the workpiece edge.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood.

Technical information:
By combining jointing and bevelling or rounding cutterheads several different profiles and wood thicknesses can be covered. Different radii or bevel profile knives can be mounted in one cutterhead.

Jointing, rounding or bevelling tool
SG 599 2 53

Tool Type	R mm	BEM	n_{max} min^{-1}	ID
Rounding		No. of tools 1	12000	**426105** □
Jointing rounding		No. of tools 2	12000	**426106** □
Rounding jointing rounding	3-8	No. of tools 3	12000	**426107** □
Rounding jointing rounding	3-8 10-15	No. of tools 3	12000	**426108** □
Rounding rounding	3-8 10-15	No. of tools 2	12000	**426109** □

Spare knives:

Part-no.	BEZ	ABM mm	Tool no.	R mm	FAW °	QAL	VE PCS	ID
1	Turnblade knife	14.7x8x1.5	6			HW-30F	10	**005070** ●
1	Turnblade knife	19.7x8x1.5	3			HW-30F	10	**005071** ●
1	Turnblade knife	30x8x1.5	4			HW-30F	10	**005072** ●
1	Turnblade knife	40x8x1.5	5			HW-30F	10	**005074** ●
1	Turnblade knife	50x8x1.5	7			HW-30F	10	**005075** ●
2	ProfilCut Q knife	20x18x2	1	3		MC		**619246**
2	ProfilCut Q knife	20x18x2	1	4		MC		**619247**
2	ProfilCut Q knife	20x18x2	1	5		MC		**619248**
2	ProfilCut Q knife	20x18x2	1	6		MC		**619249**
2	ProfilCut Q knife	20x18x2	1	7		MC		**619250**
2	ProfilCut Q knife	20x18x2	1	8		MC		**619251**
2	ProfilCut Q knife	20x18x2	1	5	45°	MC		**619253**
2	ProfilCut Q knife	35x25.2x2	2	10		MC		**619384**
2	ProfilCut Q knife	35x25.2x2	2	11		MC		**619385**
2	ProfilCut Q knife	35x25.2x2	2	12		MC		**619386**
2	ProfilCut Q knife	35x25.2x2	2	13		MC		**619387**
2	ProfilCut Q knife	35x25.2x2	2	14		MC		**619388**
2	ProfilCut Q knife	35x25.2x2	2	15		MC		**619389**
2	ProfilCut Q knife	35x25.2x2	2	9	45°	MC		**619390**

Spare parts:

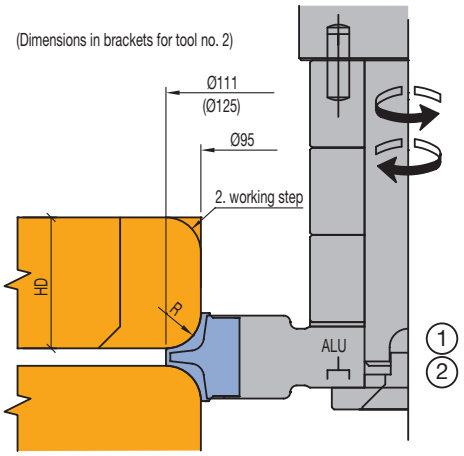
Part-no.	BEZ	ABM mm	Tool no.	ID
3	Clamping wedge	18x22x8.27	1	**629231**
3	Clamping wedge	33x29x8.27	2	**629265**
4	Clamping wedge	18x18.75x8.27	3	**009671** ●
4	Clamping wedge	28x18.75x8.27	4	**009673** ●
4	Clamping wedge	38x18.75x8.27	5	**009675** ●
4	Clamping wedge	13x18.75x8.27	6	**009670** ●
4	Clamping wedge	48x18.75x8.27	7	**009677** ●
5	Clamping screw w. disc, Torx® 25	M6x18.5		**007442** ●
6	Torx® key	Torx® 25		**117504** ●
	Allen key	SW 4		**005445** ●

Part nos. 1 and 2 - ProfilCut Q and turnblade knives - see detailed information on the following pages.

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

ID. 426105

Order example:
-Combination ID 426105
-Profile description top down RL
RL R5
-Cutter arbor from Lexicon / Larbor length 70mm / Larbor Ø 20mm

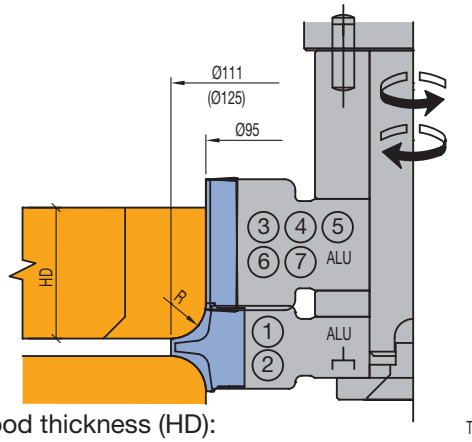


Spacers / tool weight

Tool No.	①	②
Spacer "X"	3x20.0 1x1.0	2x20.0 1x5.0 1x1.0
Weight (without cutter arbor)	0.8 kg	1.0 kg

ID. 426106

Order example:
-Combination ID 426106
-Profile description top down RL
jointingSB20/R5
-Cutter arbor from Lexicon / Larbor length 70mm / Larbor Ø 20mm



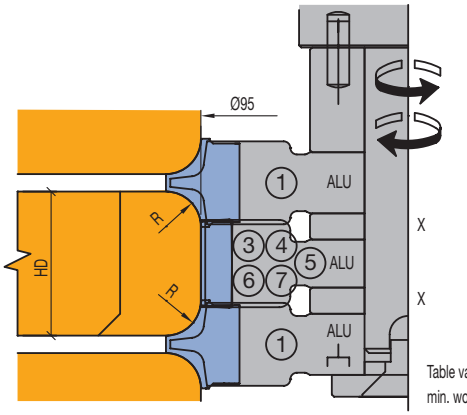
Wood thickness (HD):

Table value for bevel knives: R = 5 (9) x 45°

Tool-combination	①③	①④	①⑤	①⑥	①⑦	②③	②④	②⑤	②⑥	②⑦
max. wood thickness	19 + R	29 + R	39 + R	14 + R	49 + R	19 + R	29 + R	39 + R	14 + R	49 + R
min. wood thickness	-	-	-	-	-	-	-	-	-	-
Spacer set "X"	50.0	40.0	30.0	55.0	20.0	35.0	25.0	15.0	40.0	5.0
Weight (without cutter arbor)	0.9 kg	1.0 kg	1.0 kg	1.1 kg	1.1 kg	1.1 kg	1.1 kg	1.2 kg	1.2 kg	1.2 kg

ID. 426107

Order example:
-Combination ID 426107
-Profile description top down RL
R5/jointingSB20/R5
-Cutter arbor from Lexicon / Larbor length 70mm / Larbor Ø 20mm



At clamping height 75 mm no combination of tool no. ② is possible.

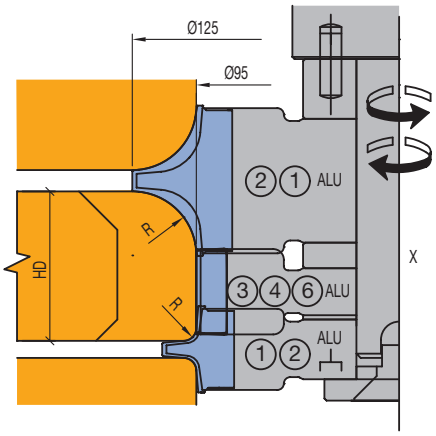
Table value for bevel knives:
min. wood thickness are with bevel 5 (9) x45° calculated

Tool-combination	①③①	①④①	①⑤①	①⑥①	①⑦①
max. wood thickness	17 + R + R	27 + R + R	37 + R + R	13 + R + R	47 + R + R (but max. 57)
min. wood thickness	21	31	41	16	51
Spacer set "X"	2x18.0	2x13.0	2x8.0	2x20.5	2x3.0
Weight (without cutter arbor)	1.0 kg	1.0 kg	1.1 kg	1.1 kg	1.1 kg

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

ID. 426108

Order example:
-Combination ID 426108
-Profile description top down RL
R12/jointingSB20/R5
-Cutter arbor from Lexicon / Larbor length 70mm / Larbor Ø 20mm



At clamping height 75 mm no combination of tool no. (2) and (2) or (5) and (7) is possible.
For combination no. (1) and (1) see ID 426107

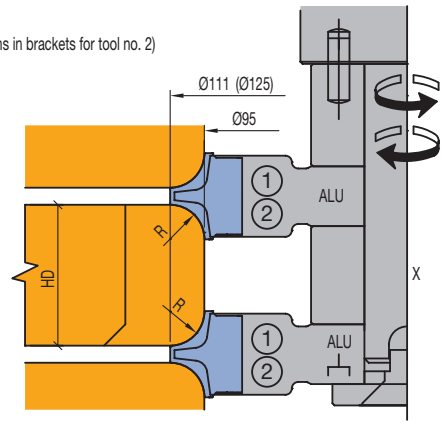
Tool-combination	1 3 2	1 4 2	1 6 2
max. wood thickness	17 + R + R	27 + R + R	13 + R + R
min. wood thickness	28	38	23
Spacer set "X"	2x10.5	2x5.5	2x13.0
Weight (without cutter arbor)	1.2 kg	1.3 kg	1.3 kg

Table value for bevel knives: R = 5 (9) x 45°
min. wood thickness are with bevel 5 (9) x45° calculated

ID. 426109

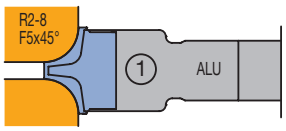
(Dimensions in brackets for tool no. 2)

Order example:
-Combination ID 426109
-Profile description top down RL
R5/R5
-Cutter arbor from Lexicon / Larbor length 70mm / Larbor Ø 20mm



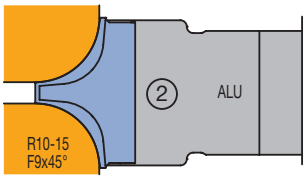
Tool-combination	1 1	2 2	1 2
max. wood thickness	57	41	49
min. wood thickness	R + R but min. 10	R + R but min. 24	R + R but min. 17
Spacer set "X"	47	17	32
Weight (without cutter arbor)	0.9 kg	1.3 kg	1.1 kg

Table value for bevel knives: R = 5 (9) x 45°
min. wood thickness are with bevel 5 (9) x 45° calculated



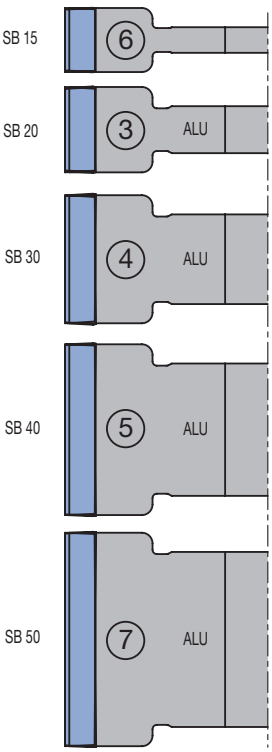
Spare part:
Clamping wedge 629231

WZ 125377 ME 619245	R2	WZ 125282 ME 619249	R6
WZ 125279 ME 619246	R3	WZ 125283 ME 619250	R7
WZ 125280 ME 619247	R4	WZ 125284 ME 619251	R8
WZ 125281 ME 619248	R5	WZ 125285 ME 619253	F5x45°



Spare part:
Clamping wedge 629265

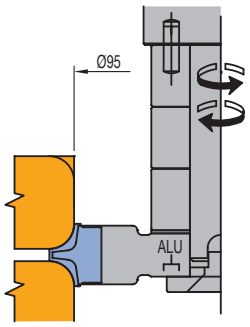
WZ 125286 ME 619384	R10	WZ 125290 ME 619388	R14
WZ 125287 ME 619385	R11	WZ 125291 ME 619389	R15
WZ 125288 ME 619386	R12	WZ 125292 ME 619390	F9x45°
WZ 125289 ME 619387	R13		



WZ 125302 ME 5070 (VE 10 pcs.)	Wedge 9670
WZ 125299 ME 5071 (VE 10 pcs.)	Wedge 9671
WZ 125300 ME 5072 (VE 10 pcs.)	Wedge 9673
WZ 125301 ME 5074 (VE 10 pcs.)	Wedge 9675
WZ 125303 ME 5075 (VE 10 pcs.)	Wedge 9677

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

ID. **426105**



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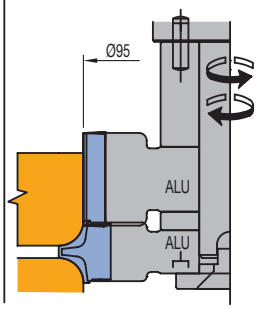

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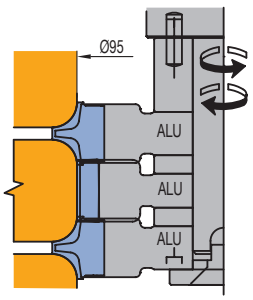

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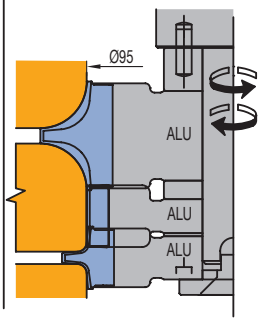
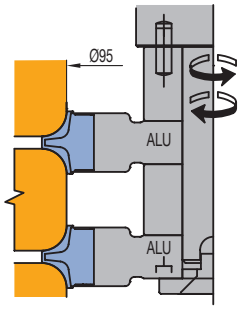
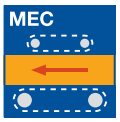


ID. **426109**



● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW

Profile cutterhead - radii / bevel profile

Application:
For rounding workpieces with different radii or 45° bevelling.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.).

Technical information:
Multi-purpose use on top or bottom of workpiece up to HD approx. 35 mm. Suitable for cutting narrow internal radii on workpieces. One tool body can be used for radii from 2 to 5 mm and 45° bevels.

Cutterhead with set of radius profile knives
AG 740 2

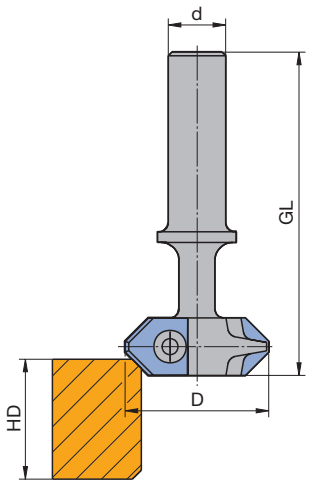
Tool Type	D mm	S mm	Z	DRI	ID
1 tool body + 2 pcs. R2, R3, R4, R5 knives each in wooden box	40	16x60	2	RH	**043105** ●

Spare knives:

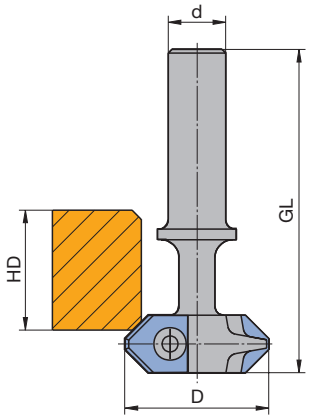
BEZ	ABM mm	QAL	R mm	FAW °	ID
Exchange knife	16x17.5x2	HW	2.0		**005132** ●
Exchange knife	16x17.5x2	HW	3.0		**005133** ●
Exchange knife	16x17.5x2	HW	4.0		**005134** ●
Exchange knife	16x17.5x2	HW	5.0		**005135** ●
Exchange knife	16x17.5x2	HW		45°	**009525** ●

Spare parts:

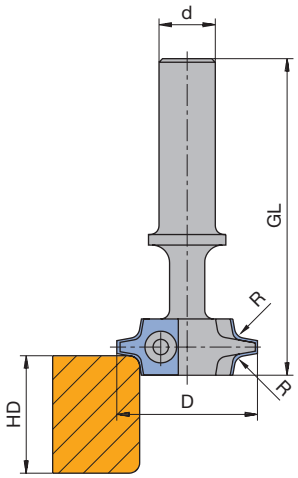
BEZ	ABM mm	ID
Oval head screw Torx® 15	M4x6	**006225** ●
Torx® key	Torx® 15	**005457** ●



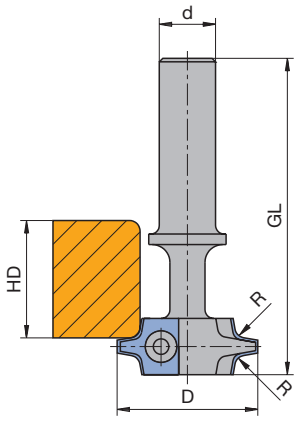
Machining chamfers on the top side of the workpiece



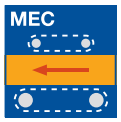
Machining chamfers on the bottom side of the workpiece

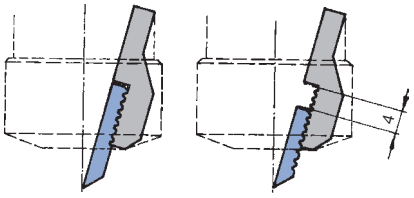


Machining radius on the top side of the workpiece



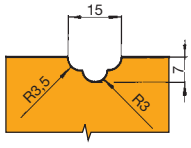
Machining radius on the bottom side of the workpiece



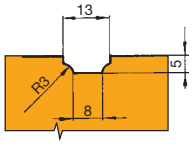


1 2

1 = Knife as new
2 = Maximum adjustment of resharpened knife



P1



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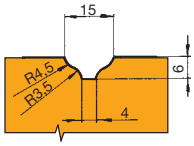

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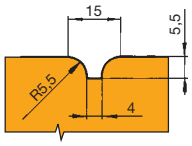

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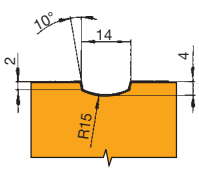

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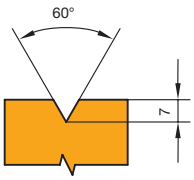


P6

Profile examples

Multi-purpose profile cutterhead, Z 1

Application:
For cutting decorative grooves and internal profiles.

Machine:
Stationary routers with/without CNC-control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutterhead with resharpenable profile knife. Form fit, play free knife mounting by precise serration. Different profiles in one tool body. Special profiles can be ground into the blank knife on request and available with DP tipping for long performance time in wood derived materials.

For profiles, Z 1, cutting in end grain
WP 500 1

D mm	GL mm	SB mm	S mm	Z	DRI	ID
15	88.5	7	16x50	1	RH	**042930** ●

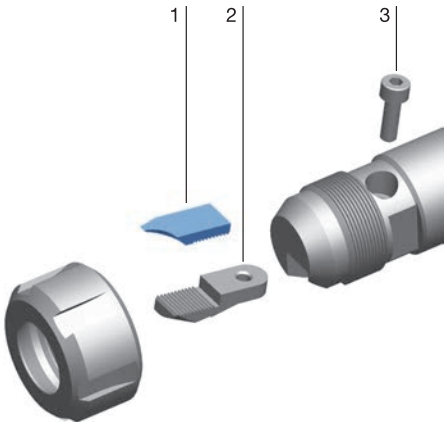
Sales unit consisting of cutterhead with clamping wedge and nut without HW knife blank.

Spare knives:

Part-no.	BEZ	P	ABM mm	QAL	ID
1	Profile knife	1	20.7x9x3	HW	**006945** ●
1	Profile knife	2	20.7x9x3	HW	**006946** ●
1	Profile knife	3	20.7x9x3	HW	**006947** ●
1	Profile knife	4	20.7x9x3	HW	**006948** ●
1	Profile knife	5	20.7x9x3	HW	**006949** ●
1	Profile knife V-groove	6 (60°)	20.7x9x3	HW	**006950** ●
1	Back serrated blank		9x21.7x3	HW	**007490** ●

Spare parts:

Part-no.	BEZ	ABM mm	ID
2	Clamping wedge with back serration	9x27.4x7	**009584** ●
3	Cylindrical screw with ISK	M4x16	**005847** ●
	Sickle spanner	34/36	**005498** ●
	Allen key	SW 3	**005433** ●



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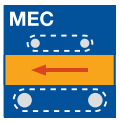
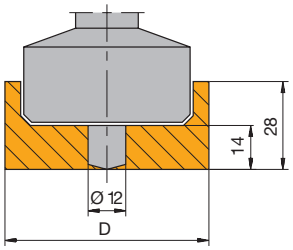


HW



Profile area

Multi-purpose profile cutterhead, Z 2

Application:
For cutting decorative grooves, internal profiles and combined external and internal profiles.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutterhead with profiled changeable knives. One knife with centre cutting design. Knives with shear angle. Different profiles possible in one tool body. Special profiles ground into blank knives and backing plates on request. Use cutterhead WP 500 1 for smaller decorative groove profiles (d < 15 mm).

For profiles, Z 2, cutting in end grain
WG 502 2 01

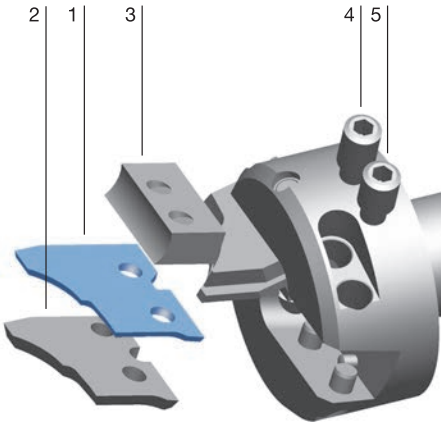
D mm	GL mm	SB mm	S mm	Z	DRI	ID
65	95	14 - 28	16x50	2	RH	**042872** ●
65	95	14 - 28	20x50	2	RH	**042873** ●
65	105	14 - 28	25x60	2	RH	**042870** ●

Sales unit consisting of cutterhead with clamping wedge but without profiled HW knives and backing plates. Tip with 1 replaceable profile knife and backing plate each, version A and 1 replaceable profile knife and backing plate each, version B.

Minimum order quantity:
Replaceable profile knife: 6 pcs. each A and B
Backing plates: 1 pc. each A and B
Profile examples see next page.

Spare parts:

Part-no.	BEZ	ABM mm	QAL	ID
1	Blank knife	35.5x30.5x2	HW	**007488** ●
1	Blank knife	35.5x30.5x2	HW	**007489** ●
2	Backing plate A	34x28x4		**007923** ●
2	Backing plate B	34x28x4		**007924** ●
3	Clamping wedge	25x15x8		**009969** ●
4	Allen screw	M8x16		**006042** ●
5	Allen screw	M8x14		**006073** ●
	Allen key	SW 4		**005445** ●



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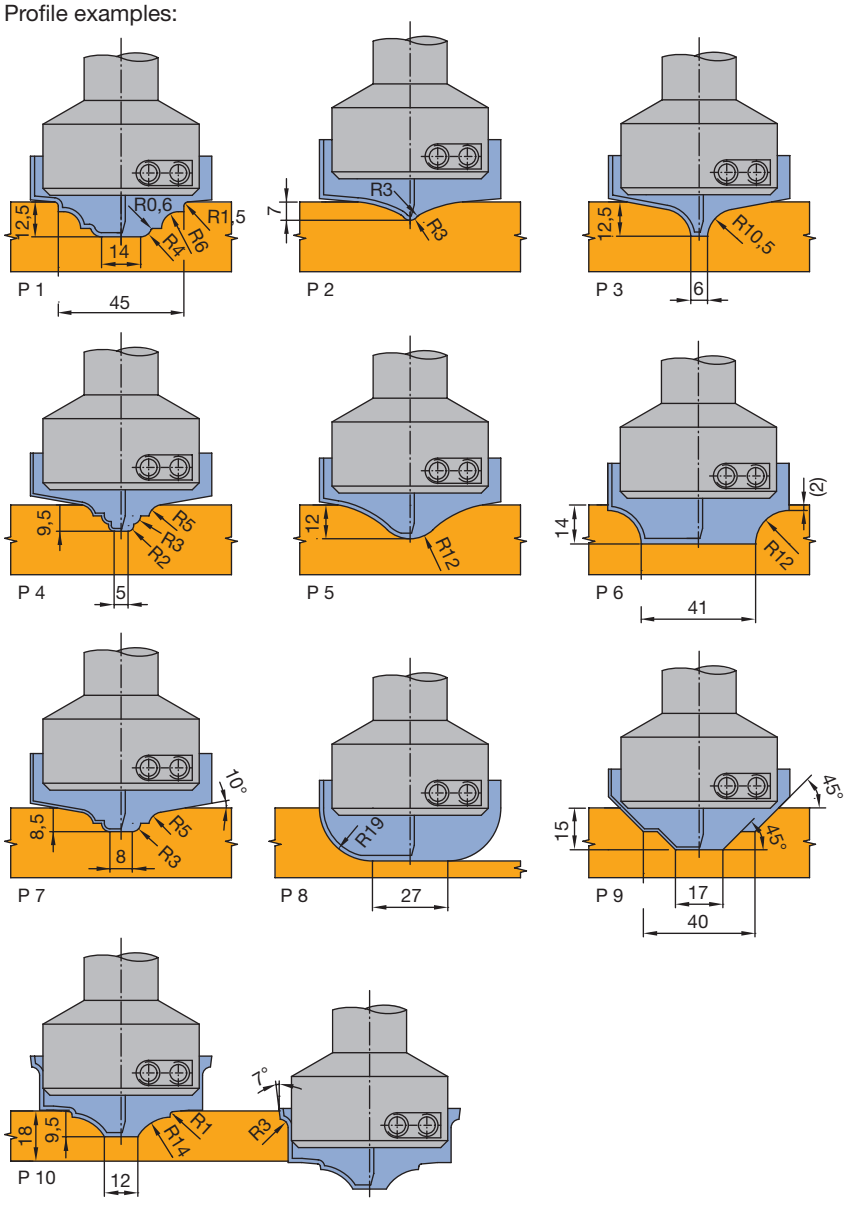
□ available at short notice
Instruction manual visit www.leitz.org

Sets of profile knives and backing plates
AT 103 0, AT 199 0

P	ID Set of backing plates	ID Set of profile knives
1	**692200** □	**692000** □
2	**692201** □	**692001** □
3	**692202** □	**692002** □
4	**692203** □	**692003** □
5	**692204** □	**692004** □
6	**692205** □	**692005** □
7	**692206** □	**692006** □
8	**692207** □	**692007** □
9	**692208** □	**692008** □
10	**692209** □	**692009** □

Set of profile knives consisting of 1 profile knife design A and B each.
Set of backing plates consisting of 1 backing plate design A and B each.
Minimum order quantity: set of profile knives: 6 pcs., set of backing plates: 1 pc.

Profile examples:



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□ available at short notice
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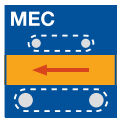
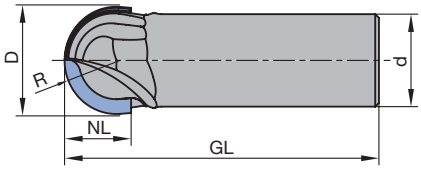


DP



Router cutter - ProfilDiamaster ball nose

Application:
Routers to cut radius profiles in panels for furniture and interior construction.

Machine:
Stationary routers with/without CNC control, machining centres, milling machines with spindles to mount shank tools.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

Technical information:
DP profile edges with shear angle. Resharpenable 3 to 5 times with normal wear.

DP, Z 2
WO 531 2 51

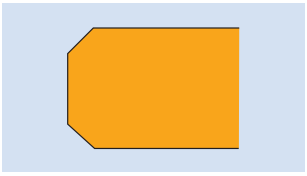
D	GL	NL	S	R	DRI	ID
mm	mm	mm	mm	mm		
20	75	12	20x55	10	RH	**191035**
20	80	12	25x60	10	RH	**191036**
30	80	18	20x55	15	RH	**191037**
30	85	18	25x60	15	RH	**191038**
40	90	24	20x55	20	RH	**191039**
40	95	24	25x60	20	RH	**191040**

RPM: n = 18000 - 24000 min^{-1}

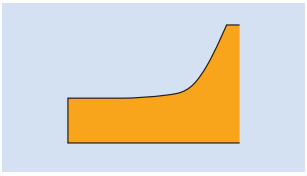
Other profiles on request.

Application example:
MDF wall covering or MDF furniture part

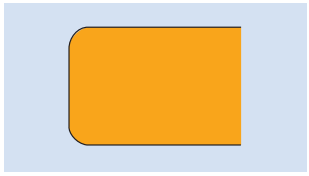
Working step/Application	Profiling.
Workpiece material [recommended cutting material]	Softwood and hardwood [HS, HW]. Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc. [HW, DP]. Plywood [HW, DP]. Duromers [HW, DP]. Plastomers [HS, HW, DP]. Solid surface material (Corian, Varicor etc.) [HW, DP]. Decorative laminates (HPL-compact laminate, Trespa etc.) [HW, DP]. Non-ferrous metal (Aluminium, copper etc.) [HS, HW, DP].
Machine	Stationary routers with/without CNC control. Milling machines with spindles to mount shank tools.
Operation	For conventional and climb cut operations, limited chip removal.
Technical features	Profile shank cutters can be produced for the following profiles:



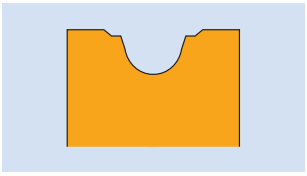
Bevelling



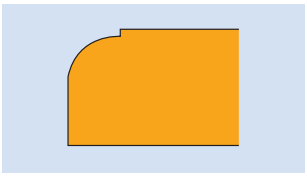
Panel raising



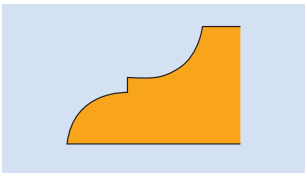
Edges with radii



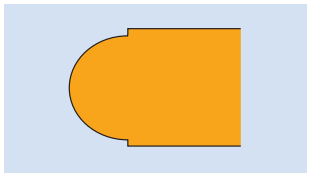
Decorative grooves



Quarter round

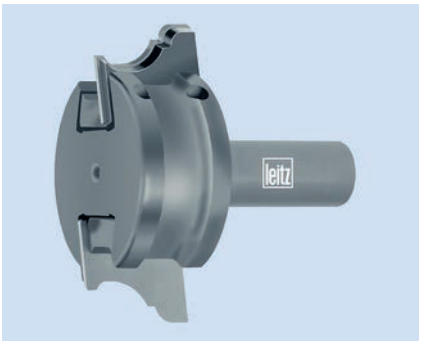


Other special profiles



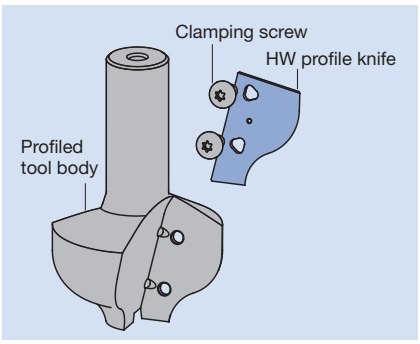
Half round

VariForm	Profile cutterhead with shank for blank knives on profiled tool body or blank knives with backing plates



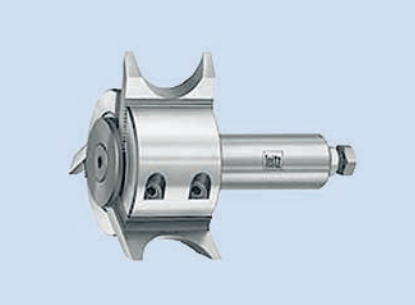
VariForm profile cutterhead with blank knives and backing plates

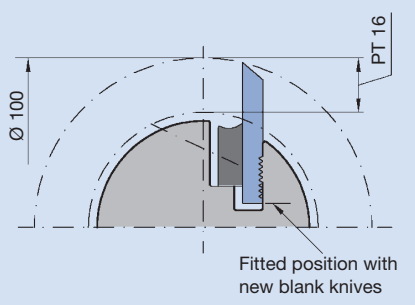
VariForm profile cutterhead with profiled tool body.

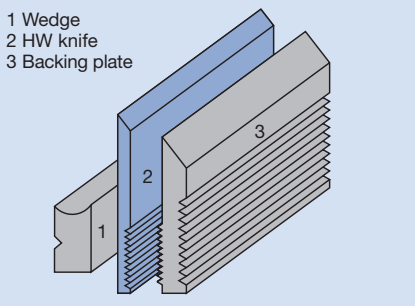


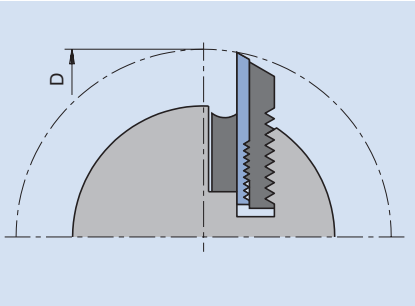
Profiling of the knives, backing plates and tool body by Leitz service.

Profile cutterhead with shank for serrated back blank knives





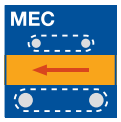


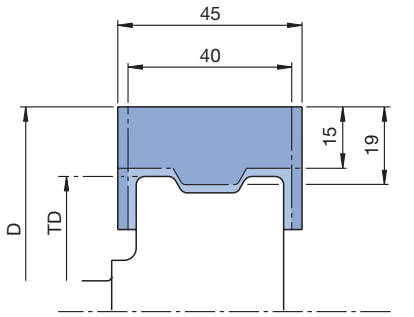


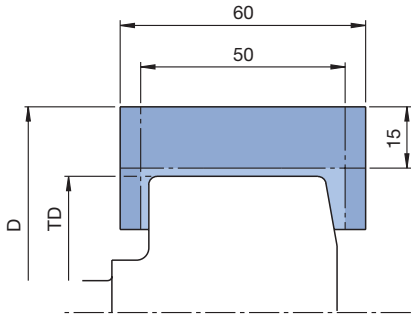
Existing profile cutterheads can use the Micro-system set.

Tipped profile shank cutter

Tipped profile shank cutters can be supplied in various designs.
Available with HS, HW and DP cutting materials and produced to customer requirements.
Designs with Z 1 - Z 5, with or without shear angle, Z 1/1 - Z 3/3 with alternate shear angles and with or without plunging tip.
Further information available from your nearest Leitz subsidiary or agency.



Profile area

Profile cutterhead VariForm with backing plates

Application:
For cutting different profiles. Profile can be changed by replacing profile knives and backing plates.

Machine:
Stationary routers with/without CNC control, milling machines with spindles to mount shank tools.

Workpiece material:
Softwood and hardwood (HW-30F), chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.) (HW-10F).

Technical information:
Three point knife clamping for high precision and safety. Economic, resharpenable 3 to 4 times. Modular system: use the same profile knives in different tool bodies on different machines.

Tool body, mech. feed, Z 2
TU 531 2

D mm	TD mm	SB mm	S mm	PT_{max} mm	DRI	ID
110	76	40/45	25x60	15	RH	**135400** ●
110	76	50/60	25x60	15	RH	**135401** ●

RPM: n_{max} = 12000 min^{-1}

Supplied with clamping wedges, but without backing plates and knives.

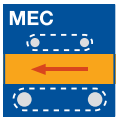
Spare knives:

BEZ	H mm	SB mm	PT_{max} mm	ID HW-10F	ID HW-30F
Blank knife VariForm	40	40	15	**636227** ●	**636240** ●
Blank knife VariForm	40	45	15	**636231** ●	**636244** ●
Blank knife VariForm	40	50	15	**636284** ●	**636272** ●
Blank knife VariForm	40	60	15	**636288** ●	**636276** ●

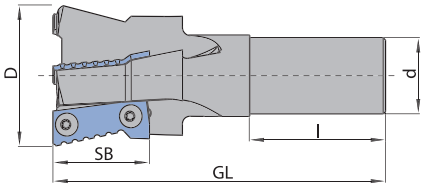
Spare parts:

Tool Type	ABM mm	H mm	for SB mm	PT_{max} mm	ID
Backing plate	for knives 40x40x2.1	40	40	15	**645000** ●
Backing plate	for knives 45x40x2.1	40	45	15	**645001** ●
Backing plate	for knives 50x40x2.1	40	50	15	**645002** ●
Backing plate	for knives 60x40x2.1	40	60	15	**645003** ●
Clamping wedge	36x13.5x26		40/45		**009761** ●
Clamping wedge	44x13.5x26		50/60		**009762** ●
Allen screw	M10x12				**006044** ●
Key	SW 5, L100				**117506** ●

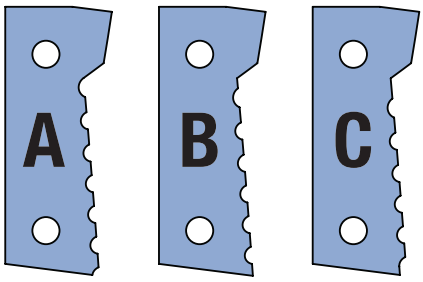
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW



Cylindrical shank design



Spare knives Marathon type A, B, C

Dovetail router cutter with exchangeable knives

Application:
For producing dovetail joints especially in the wood and frame construction.

Machine:
Stationary routers with/without CNC control, machining centres, joinery machines, special cutting machines to process frame parts.

Workpiece material:
Softwood and hardwood, glulam and laminted wood.

Technical information:
HW changing knives Z3 with Marathon coating for extremely high performance times. Chipbreakers in roughing/finishing design for small cutting forces and nearly even areas. One knife each of knife type „A“, „B“ and „C“ has to be mounted in the cutter.

With cylindrical shank, incl. knives SB = 38 mm
WG 502 2

D mm	GL mm	SB mm	S mm	DRI	Z	ID without adaptor
60	131	38/51	30x53,5	LH	3	**250000** ●
60	131	38/51	30x53,5	RH	3	**250001** ●

RPM: n = 6000 - 18000 min^{-1}

Spare knives:

Part-no.	BEZ	SB mm	Type	ID LH	ID RH
1	Marathon profile knife	38	A	**602517** ●	**602509** ●
1	Marathon profile knife	38	B	**602518** ●	**602510** ●
1	Marathon profile knife	38	C	**602519** ●	**602511** ●
1	Marathon profile knife	51	A	**602520** ●	**602512** ●
1	Marathon profile knife	51	B	**602521** ●	**602513** ●
1	Marathon profile knife	51	C	**602522** ●	**602514** ●

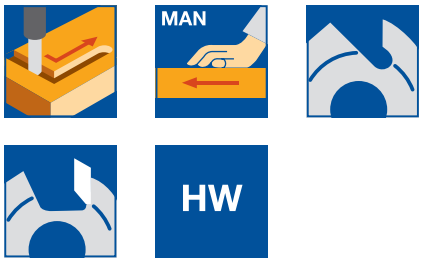
Spare parts:

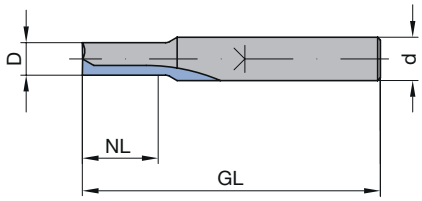
Part-no.	BEZ	ABM mm	ID
2	Oval head screw Torx® 15	M4x6	**006225** ●
3	Torx® key	Torx® 15	**005457** ●

Working step/Application	Sizing, jointing, grooving and profiling.
Workpiece material [recommended cutting material]	Softwood and hardwood [HS, HW]. Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc. [HW]. Plywood [HW]. Duromers [HW, DP]. Plastomers [HS, HW]. Solid surface material (Corian, Varicor etc.) [HW]. Composite panels (Alucobond®, Dibond® etc.) [HW].
Machine	Portable routers
Operation	Conventional cut, limited chip removal.
Technical features	Tools for portable routers are: Straight routers: HS solid HW tipped HW solid HW turnblade DP tipped (Only for special applications with known workpieces). Profile routers: HW tipped DP tipped (Only for special applications with known workpieces).
Application parameters	**RPM** Recommended RPM for routing and boring tools on portable router machines:

	Recommended RPM n [min^{-1}]
Dowel drill	3000 – 9000
Hinge drill	3000 – 9000
Router cutter with cylindrical shank	18000 – 30000
Router cutter with internally thread shank	16000 – 24000
Turnblade router cutter WL 101 1	16000 – 18000
Profile cutters HW tipped	18000 – 27000

	The RPM speeds marked on the shank are mandatory.
Feed	The manual feed speed of portable routers depends on the required cut quality and machine load. To ensure proper intended use of portable router bits it is only allowed to machine in conventional cut. Climb cut is not permissible.
Machining method	Portable routers are usually used either with guide bearings or templates when producing components in batches. Router cutters with guide bearings are suitable for additional machining operations on part finished components. Tools without guide bearings are generally used with either a side stop or a guide rail system.





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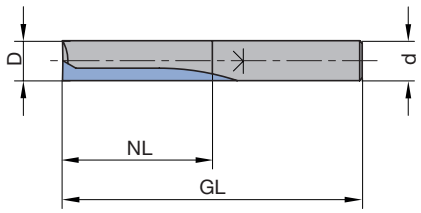

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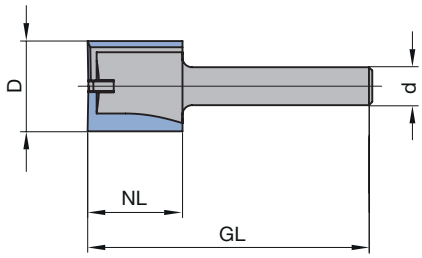


ID **072377**

Grooving cutters, shank 8 mm

Application:
Router cutter for sizing and grooving.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut, ground on end or with tungsten carbide plunging tip.

HW solid, Z 2
WO 120 1 16

D mm	GL mm	NL mm	S mm	QAL	DRI	ID
3	45	6	8x30	HW solid	RH	**072612** □
4	45	10	8x30	HW solid	RH	**072608** □
5	45	12	8x30	HW solid	RH	**072613** □
6	55	14	8x40	HW solid	RH	**041984** ●
7	55	17	8x30	HW solid	RH	**041958** ●
8	55	20	8x30	HW solid	RH	**041985** ●
8	60	30	8x30	HW solid	RH	**072650** □

HW, Z 2, short version
WO 120 1 09, WO 120 1 10

D mm	GL mm	NL mm	S mm	QAL	DRI	ID
9	55	25	8x30	HW	RH	**040304** ●
10	60	20	8x40	HW	RH	**040440** ●
10	60	25	8x30	HW	RH	**072614** □
11	60	20	8x40	HW	RH	**040441** ●
12	60	20	8x40	HW	RH	**072368** ●
13	60	20	8x40	HW	RH	**072369** ●
14	60	20	8x40	HW	RH	**072370** ●
15	60	20	8x40	HW	RH	**072371** ●
16	70	20	8x50	HW	RH	**072372** ●
18	60	20	8x40	HW	RH	**072374** □
19	60	20	8x40	HW	RH	**072376** □
20	60	20	8x50	HW	RH	**072377** ●
22	60	20	8x50	HW	RH	**072379** ●
24	60	20	8x40	HW	RH	**072380** ●
25	60	20	8x40	HW	RH	**072381** ●
30	60	20	8x40	HW	RH	**072382** ●

HW, Z 2, long version
WO 120 1 10

D mm	GL mm	NL mm	S mm	QAL	DRI	ID
10	60	30	8x30	HW	RH	**072651** □
12	60	30	8x30	HW	RH	**072652** □
16	65	30	8x35	HW	RH	**072373** ●
18	60	30	8x30	HW	RH	**072375** ●
20	60	30	8x30	HW	RH	**072378** ●

RPM: n = 18000 - 30000 min^{-1}

HW

Grooving cutter, shank 12 mm

Application:
Router cutter for sizing and grooving. Grooving operation for automatic door seals.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut, tungsten carbide plunging tip (only WO 120 1 10). Long version for increased cutting depth (recommended in several steps).

HW, Z 2
WO 120 1 01, WO 120 1 10

D mm	GL mm	NL mm	S mm	DRI	ID
10	90	35	12x40	RH	**072495** ●
12	90	40	12x40	RH	**072496** ●
13.2	85	35	12x40	RH	**072741** □
14	85	40	12x40	RH	**072104** □
14	100	50	12x40	RH	**072233** ●
15	85	35	12x40	RH	**072742** □
16	90	45	12x40	RH	**072105** ●
16	100	60	12x40	RH	**072234** ●
18	90	45	12x40	RH	**072106** ●
20	90	45	12x40	RH	**072107** ●
22	90	45	12x40	RH	**072108** ●
24	90	45	12x40	RH	**072109** ●
30	90	35	12x40	RH	**072498** ●

RPM: n = 18000 - 30000 min^{-1}

Table for selection of grooving cutter depending on door seal:

Door seal	Width mm	Depth mm	ID
Doppeldicht	12	40	**072496**
Kältefeind	12	40	**072496**
Planet HS	13,1	30	**072741**
Schall-Ex L	14,8	32	**072742**
Schall-Ex RD	14,8	28	**072742**
Schall-Ex Ultra	19,7	30	**072107**

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW

Grooving cutter with internal threaded shank

Application:
Router cutter for sizing and grooving.

Machine:
Portable routers. M10: Scheer, M12: DeWalt (former ELU).

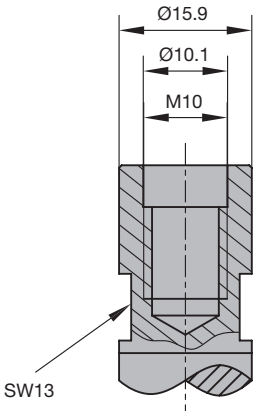
Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut, ground on end or tungsten carbide plunging tip.

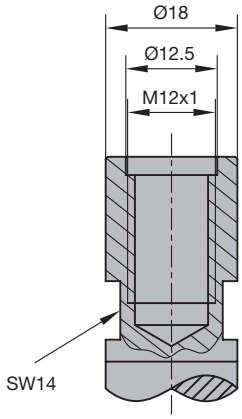
HW, Z 2
WO 120 1 06, WO 120 1 11, WO 120 1 12

D	GL	NL	S	QAL	DRI	ID
mm	mm	mm	mm			
10	67	35	M10	HW	RH	**042050** ●
12	70	40	M12	HW	RH	**040082** ●
16	75	45	M12	HW	RH	**040084** ●
20	60	25	M12	HW	RH	**039942** ●

RPM: n = 16000 - 24000 min^{-1}



Threaded shank M10



Threaded shank M12x1

HS

Spiral grooving cutter HS

Application:
Router cutter for sizing and grooving.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood. Thermoplastics.

Technical information:
HS solid, spiral edges, ground plunging edge.

HS, Z 2
WO 160 1

D mm	GL mm	NL mm	S mm	Z	Twist	DRI	ID
6	50	21	8x25	2	RD	RH	**072766** □
8	50	19	8x30	2	RD	RH	**072391** □
10	60	30	8x30	2	RD	RH	**072393** □
12	52	20	8x30	2	RD	RH	**072185** □
14	52	20	8x30	2	RD	RH	**072186** □
16	52	20	8x30	2	RD	RH	**072187** □
18	57	25	8x30	2	RD	RH	**072188** □
20	57	25	8x30	2	RD	RH	**072189** □

RPM: n = 18000 - 30000 min^{-1}

HW

Spiral grooving cutter HW

Application:
Router cutter for sizing and grooving.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.). Thermoplastics. Solid surface material (Corian, Varicor etc.).

Technical information:
Solid tungsten carbide, spiral edges, ground plunging edge.

HW, Z 2
WO 160 1

D mm	GL mm	NL mm	S mm	QAL	Z	Twist	DRI	ID
4	45	10	8x25	HW solid	2	RD	RH	**072615** □
6	50	21	8x30	HW solid	2	RD	RH	**072759** □
8	55	25	8x30	HW solid	2	RD	RH	**072397** □
10	60	30	8x30	HW solid	2	RD	RH	**072399** □

RPM: n = 18000 - 30000 min^{-1}

● available ex stock
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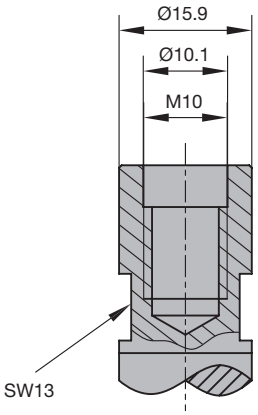
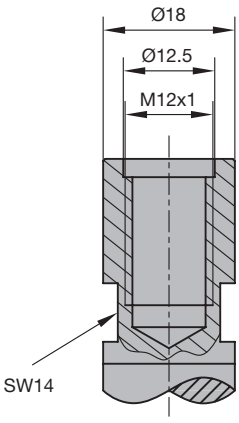
Instruction manual visit www.leitz.org

HW



Threaded shank M10



Threaded shank M12x1

Turnblade router cutter

Application:
Router cutter for sizing and grooving to finish quality.

Machine:
Portable routers. M10: Scheer, M12: DeWalt (former ELU).

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.), duromers, plastomers, solid surface material (Corian, Varicor etc.).

Technical information:
Straight cut with tungsten carbide plunging tip. For grooving with constant tool diameter. Knife tip designed for seamless cut. Teflon coated tool body to reduce resin and glue build up.

HW, Z 1+1, with plunging tip
WL 101 1

D mm	GL mm	NL mm	S mm	DRI	ID
16	70	30	8x30	RH	**071050** □
18	70	30	8x30	RH	**071051** □
20	54	12	8x25	RH	**040824** ●
16	64	30	M10	RH	**040911** ●
20	64	30	M10	RH	**040915** ●
16	64	30	M12x1	RH	**040917** ●
18	64	30	M12x1	RH	**040919** ●
20	64	30	M12x1	RH	**040921** ●

RPM: n = 16000 - 18000 min^{-1}

Spare knives:

BEZ	Knife	ABM mm	for D mm	QAL	VE PCS	ID
Turnblade knife	Plunging tip	7.6x12x1.5	16 - 18	HW-05F	10	**005080** ●
Turnblade knife	Plunging tip	9x12x1.5	20	HW-05F	10	**005158** ●
Turnblade knife	Peripheral tip	12x12x1.5		HW-05F	10	**005081** ●
Turnblade knife	Peripheral tip	30x12x1.5		HW-05F	10	**005161** ●

Spare parts:

BEZ	Knife	ABM mm	for D mm	ID
Screw	Plunging tip	M3.5x4 (head D7)	16 - 20	**006068** ●
Screw	Peripheral tip	M3.5x4 (head D9)	16 - 20	**006226** ●
Torx® key		Torx® 15		**005457** ●

HW

Turnblade router cutter

Application:
Router cutter for sizing and grooving to finish quality.

Machine:
Portable routers.

Workpiece material:
Softwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc.

Technical information:
Tungsten carbide turnblade knife clamped by wedge. Design without plunging tip only suitable for ramp plunging. Design with plunging tip limited suitable for axial plunging.

HW, Z 1, with plunging tip
WL 100 1

D mm	GL mm	NL mm	S mm	DRI	ID
14	107	45	12x40	RH	**041722** ●

HW, Z 1, without plunging tip
WL 100 1

D mm	GL mm	NL mm	S mm	DRI	ID
8	55	20	8x30	RH	**041622** ●
10	60	25	8x30	RH	**041641** ●
12	66	30	8x30	RH	**041665** ●
14	66	30	8x30	RH	**041670** ●

RPM: n = 16000 - 24000 min^{-1}

Spare knives:

BEZ	ABM mm	for D mm	NL mm	QAL	VE PCS	ID
Turnblade knife	20x4.1x1.1	8 - 9	20	HW-05	10	**005186** ●
Turnblade knife	25x5.5x1.1	10	25	HW-05	10	**005188** ●
Turnblade knife	30x5.5x1.1	11 - 24	30	HW-05	10	**005189** ●
Turnblade knife	50x5.5x1.1	14	50	HW-05	10	**005191** ●

Spare parts:

BEZ	ABM mm	for D mm	NL mm	ID
Clamping wedge	17.5x5.15x2.8	8 - 9	20	**009258** ●
Clamping wedge	22.5x6.54x4	10	25	**009260** ●
Clamping wedge	27.5x7.35x3.7	12 - 14	30	**009263** ●
Clamping wedge with plunging tip	45x3.7x7.35	14	45	**009749** ●
Countersink screw, Torx® 8	M2.5x5.7	8 - 11		**006231** ●
Countersink screw, Torx® 8	M3x7.6	12 - 14		**006233** ●
Countersink screw, Torx® 15	M4x11.5	16 - 20		**006234** ●
Torx® key	Torx® 8, L=40			**006092** ●
Torx® key	Torx® 15			**005457** ●

● available ex stock
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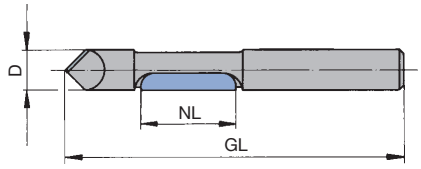
HW



Panel pilot router cutter Z 1 with V-point plunging tip

Panel pilot router cutter

Application:
Router cutter for edge trimming of protruding veneer or laminates and for plunging and cutting apertures into veneered or laminated panels.

Machine:
Portable routers.

Workpiece material:
Chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., glulam (HPL, CPL etc.).

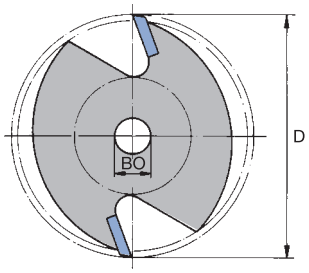
Technical information:
Straight cut with V-point plunging tip.

HW, Z 1, with guide pin
WO 250 0 01

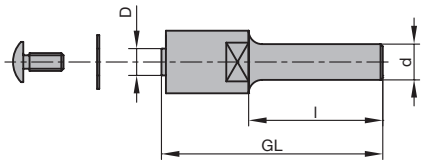
D mm	GL mm	NL mm	S mm	DRI	ID
6	65	19	6x27	RH	**039610** ●
8	65	19	8x30	RH	**041586** ●

RPM: n = 18000 - 30000 min^{-1}

HW



WK 200 3 01 grooving cutter Z 2



PM 100 0 Arbor

Grooving cutters

Application:
Router cutter for grooving panel edges.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

HW, Z 2, flat tooth, without arbor
WK 200 3 01

D mm	BO mm	SB mm	ID
40	6	1.5	**039644** ●
40	6	1.8	**039648** ●
40	6	2	**039652** ●
40	6	2.5	**039660** ●
40	6	3	**039668** ●
40	6	3.5	**039672** ●
40	6	4	**039676** ●
40	6	5	**070653** ●

RPM: n = 12000 - 14000 min^{-1}

Application:
For fixing of grooving cutter WK 200 3 01 without ball bearing guide.

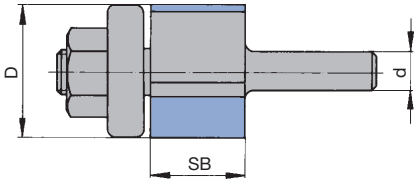
Arbor without ball bearing guide ring
PM 100 0

D mm	GL mm	S mm	DRI	ID
6	49	8x30	RH	**072772** □

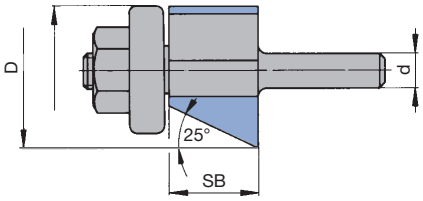
Spare parts:

BEZ	ABM mm	ID
Washer	6x12x0.5	**116009** ●
Clamping screw, Torx® 15	M4x9	**007887** ●
Torx® key	Torx® 15	**005457** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



Edge trimming cutter with guide ring on bottom



Square bevel trimming cutter with guide ring on bottom

Edge trimming cutter

Application:
Router for edge trimming or chamfering of protruding veneer, laminates or edgeband materials. Tool guided on the workpiece by ball bearing guide ring.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Ball bearing guide ring for use with templates or guided by the workpiece edge.

Edge trimming cutter, HW, Z 2 with guide ring
WO 203 1, WO 203 1 01

D mm	SB mm	S mm	BEM	DRI	ID
21	15	6x30	Guide ring on bottom	RH	**039440** ●
12.7	25	8x30	Guide ring on bottom	RH	**072509** □
19	25	8x30	Guide ring on shank side	RH	**072572** □

RPM: n = 18000 - 27000 min^{-1}

Spare parts:

BEZ	BEM	ABM mm	ID
Ball bearing	to ID **072509**	12.7x4.97x4.76	**008088** ●
Ball bearing	to ID **072572**	19.05x12.7x4.97	**008105** ●
Ball bearing guide	to ID **039440**	21x7.2x15.88	**072157** ●

Square bevel trimming cutter, HW, Z 1+1 / bevel 45°
WO 314 1 01

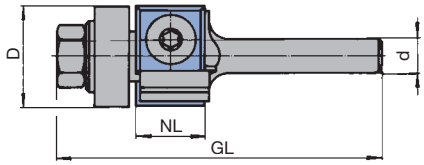
D mm	D1 mm	SB mm	S mm	FAW °	DRI	ID
24	18	11	8x30	45°	RH	**070477** □

RPM: n = 18000 - 27000 min^{-1}

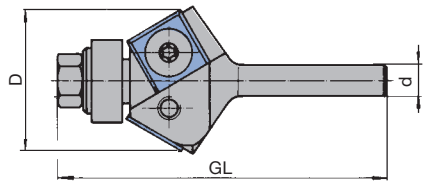
Spare parts:

BEZ	BEM	ABM mm	ID
Ball bearing guide	to ID **070477**	18x8x15.88	**070828** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



WL 220 1/0°-jointing cutter with guide ring



WL 320 1/30°-bevel cutter with guide ring

Turnblade jointing / bevel cutter

Application:
Router cutter for edge trimming or bevelling on machines with copy shaping guide ring, side stop or guide rail systems.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Tools with ball bearing guide ring for use with templates or guided by the workpiece edge. Replaceable tungsten carbide turnblade knives.

HW, Z 2, with ball bearing guide ring
WL 220 1, WL 320 1

Class.	D mm	GL mm	NL mm	S mm	FAW °	DRI	ID
WL 220 1	19	52.7	12	8x30	0°	RH	**072776** □
WL 220 1	19	64.5	20	8x30	0°	RH	**040765** ●
WL 220 1	19	74.5	30	8x30	0°	RH	**040774** ●
WL 320 1	27	60		8x30	45°	RH	**072767** □

RPM: n = 18000 - 30000 min^{-1}

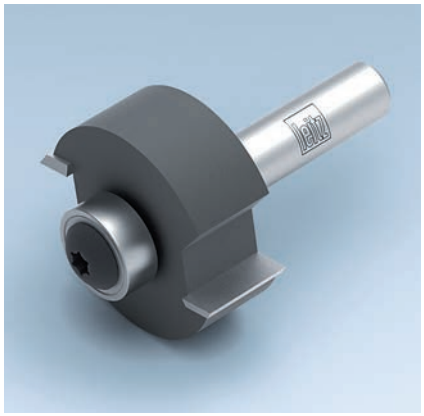
Spare knives:

BEZ	Knife	BEM	ABM mm	QAL	VE PCS	ID
Turnblade knife	Peripheral tip	Bevel 45°	12x12x1.5	HW-05F	10	**005081** ●
Turnblade knife	Peripheral tip		20x12x1.5	HW-05F	10	**005083** ●
Turnblade knife	Peripheral tip		30x12x1.5	HW-05F	10	**005084** ●

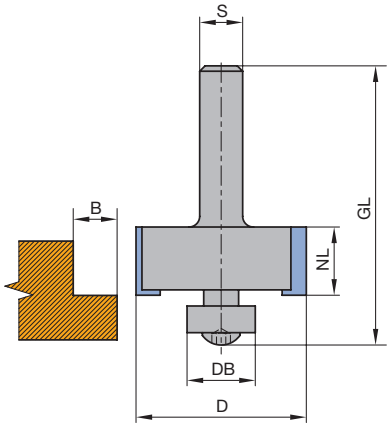
Spare parts:

BEZ	BEM	ABM mm	ID
Ball bearing	D19	19x6x6	**008082** ●
Ball bearing	D27/45°	12.7x4.97x4.76	**008088** ●
Nut	NL30	M6	**005651** ●
Oval head screw Torx® 15	NL12	M4x5	**007038** ●
Clamping screw, Torx® 15	NL12/45°	M4x9	**007887** ●
Oval head screw Torx® 15	NL20/30	M4x6	**006225** ●
Torx® key		Torx® 15	**005457** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW



Note:
Variable rebating widths by changing the guide rings.

DB	9,53	12,7	16	19	22
B	11	9,5	7,9	6,35	4,9

Rebating cutter

Application:
Router for cutting rebates.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut, ball bearing guide ring. Variable rebating width by changing the guide rings.

HW, Z 2
WO 434 1

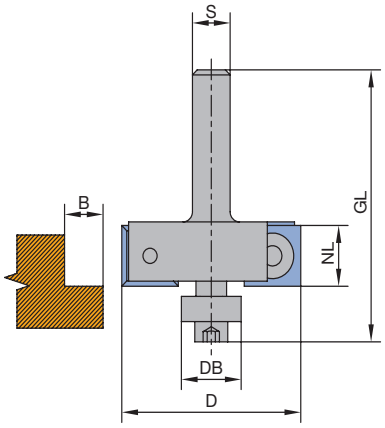
D mm	DB mm	GL mm	NL mm	S mm	QAL	DRI	ID
31.7	12.7	54	12.7	8x30	HW	RH	**072479** ●

RPM: n = 16000 - 22000 min^{-1}

Spare parts:

BEZ	ABM mm	B mm	ID
Ball bearing	9.53x3.17x4.76	11	**008087** ●
Ball bearing	12.7x4.97x4.76	9.5	**008088** ●
Ball bearing guide	16x8x4.76	7.9	**072629** ●
Ball bearing guide	19x8x4.76	6.35	**072630** ●
Ball bearing guide	22x8x4.76	4.9	**072631** ●
Oval head screw Torx® 15	M4x8		**007407** ●
Torx® key	Torx® 15		**005457** ●

HW



DB	9,53	12,7	16	19	22
B	14,2	12,6	11	9,5	8

Note:
Set of ball bearing guide rings consists of DB = 9.53 / 12.7 / 16 / 19 and 22 mm

Turnblade rebating cutter

Application:
Router for cutting rebates.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut, ball bearing guide ring. Variable rebating width by changing the guide rings.

HW, Z 2, with set of ball bearing guide rings
AL 630 1

D mm	DB mm	GL mm	NL mm	S mm	QAL	DRI	ID
38	12.7	54	12.7	8x30	HW	RH	**072521** □

RPM: n = 18000 - 27000 min^{-1}

Spare knives:

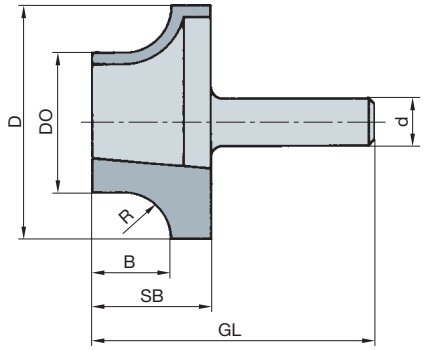
BEZ	ABM mm	QAL	ID
Turnblade knife	12x12x1.5	HW-05F	**005081** ●

Spare parts:

BEZ	ABM mm	B mm	ID
Ball bearing	9.53x3.17x4.76	11	**008087** ●
Ball bearing	12.7x4.97x4.76	9.5	**008088** ●
Ball bearing guide	16x8x4.76	7.9	**072629** ●
Ball bearing guide	19x8x4.76	6.35	**072630** ●
Ball bearing guide	22x8x4.76	4.9	**072631** ●
Oval head screw Torx® 15	M4x8		**007407** ●
Oval head screw Torx® 15	M4x6		**006225** ●
Torx® key	Torx® 15		**005457** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



Quarter round cutter Z 2

Quarter round cutter

Application:
Router cutter for rounding with template, guide ring, side stop or guide rail system.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

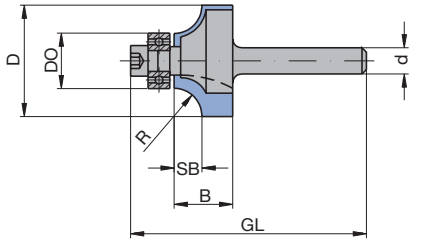
Technical information:
Edges with shear angle, without plunging tip.

Quarter round cutter, HW, Z 2
WO 531 1 01

D mm	D_0 mm	SB mm	GL mm	S mm	R mm	DRI	ID
17	11	10	41	8x30	3	RH	**072429** ●
19	11	11	42	8x30	4	RH	**072431** ●
21	11	12	43	8x30	5	RH	**072433** ●
23	11	13	44	8x30	6	RH	**072435** ●
27	11	15	45	8x30	8	RH	**072437** ●

RPM: n = 18000 - 27000 min^{-1}

HW



Radius cutter

Radius cutter

Application:
Router cutter for rounding over workpiece edges. Tool guided along workpiece by ball bearing guide.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Ball bearing guide ring on bottom for use with templates or guided by the workpiece edge.

Radius cutter, HW, Z 2, shank 6 / 8 mm
WO 551 1

D mm	D_0 mm	GL mm	SB mm	B mm	S mm	R mm	DRI	ID
16.7	12.7	49	2	12	6x30	2	RH	**072456** ●
18.7	12.7	50	3	7	6x30	3	RH	**072458** ●
25.5	12.7	54	6	12	6x30	6.35	RH	**072462** ●
17.1	12.7	49	2	12	8x30	2.2	RH	**072636** ●
19.1	12.7	50	3	7	8x30	3	RH	**072635** ●
22.7	12.7	52	5	9	8x30	5	RH	**072634** ●
28.7	12.7	55	8	12	8x30	8	RH	**072632** ●
31.7	12.7	56	9.5	16.5	8x30	9.5	RH	**072637** ●
42.7	12.7	62	15	22	8x30	15	RH	**072639** ●

RPM: n = 18000 - 27000 min^{-1}

Radius cutter, HW, Z 2, shank 12 mm
WO 551 1

D mm	D_0 mm	GL mm	SB mm	B mm	S mm	R mm	DRI	ID
63	12.7	80	26	32	12x40	25	RH	**072501** ●

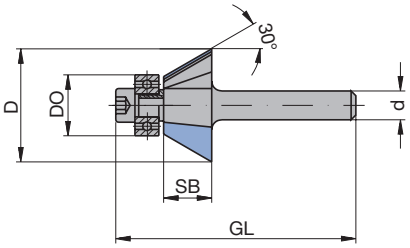
RPM: n = 16000 - 22000 min^{-1}

Spare parts:

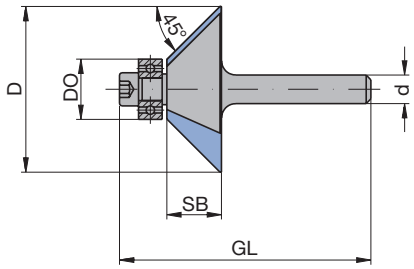
BEZ	ABM mm	ID
Ball bearing	12.7x4.97x4.76	**008088** ●
Cap screw	M4x10	**005846** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



WO 314 1 02 bevel cutter 30°



WO 314 1 03 bevel cutter 45°

Bevel cutter

Application:
Router cutter for bevelling workpiece edges. Tool guided along workpiece by ball bearing guide.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Ball bearing guide ring on bottom for use with templates or guided by the workpiece edge.

Bevel cutter, HW, Z 2, shank 8 mm
WO 314 1, WO 315 1

D mm	D_0 mm	GL mm	SB mm	FAW °	S mm	DRI	ID
25.7	12.7	70	25.1	15°	8x30	RH	**072522** □
25	12.7	50.3	12	30°	8x30	RH	**072774** □
38.5	12.7	64.5	23	30°	8x30	RH	**072523** □
26	12.7	47.8	7	45°	8x30	RH	**072775** ●

Spare parts:

BEZ	ABM mm	for D_0 mm	ID
Ball bearing	12.7x4.97x4.76	12.7	**008088** ●
Ball bearing	15.88x5x6.35	15.88	**008081** ●
Cap screw	M4x10		**005846** ●

Bevel cutter, HW, Z 2, shank 12 mm
WO 315 1

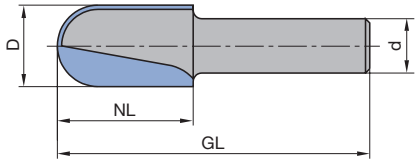
D mm	D_0 mm	GL mm	SB mm	FAW °	S mm	DRI	ID
55	12.7	76	20	45°	12x40	RH	**072517** ●

RPM: n = 18000 - 27000 min^{-1}

Spare parts:

BEZ	ABM mm	for D_0 mm	ID
Ball bearing	12.7x4.97x4.76	12.7	**008088** ●
Cap screw	M4x10		**005846** ●

HW



Guttering mould cutter without guide ring

Guttering mould cutter

Application:
Router cutter for cutting draining grooves and for copy shaping.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
For use with separate guide rings and templates, side stop or guide rail system.

Guttering mould cutter, HW, Z 2, shank 8 mm
WO 531 1, WO 531 1 06

D mm	GL mm	NL mm	S mm	R mm	DRI	ID
8	38	8	8x30	4	RH	**041153** □
16	65	25	8x30	5	RH	**072616** □
12.7	40	10	8x30	6.35	RH	**072403** □
16	41	11	8x30	8	RH	**072405** □
19.4	41	11	8x30	9.7	RH	**072057** □
25.4	44	14	8x30	12.7	RH	**072058** □

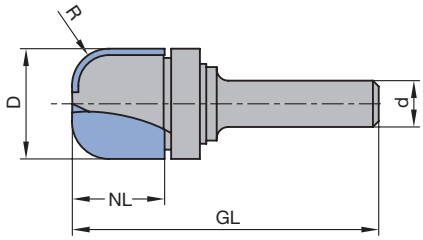
Guttering mould cutter, HW, Z 2, shank 12 mm
WO 531 1

D mm	GL mm	NL mm	S mm	R mm	DRI	ID
30	60	20	12x40	15	RH	**072222** □
40	65	25	12x40	20	RH	**072239** □

RPM: n = 18000 - 27000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



Guttering mould cutter with guide ring

Guttering mould cutter with guide ring

Application:
Router cutter for cutting draining grooves and for copy shaping.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Ball bearing guide ring on top, for use with templates or guide rail system.

Guttering mould cutter, HW, Z 2, with guide ring
WO 551 1

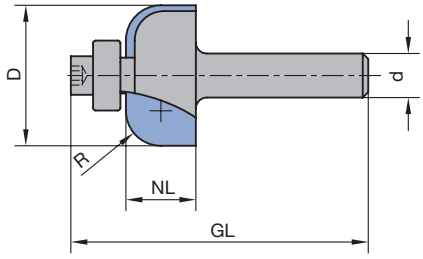
D mm	GL mm	NL mm	S mm	R mm	DRI	ID
19	53	16	8x30	6.4	RH	**072617** □

RPM: n = 18000 - 27000 min^{-1}

Spare parts:

BEZ	ABM mm	ID
Ball bearing	19.05x12.7x4.97	**008105** ●
Safety washer	12x1 DIN 471	**008419** ●

HW



Guttering mould cutter with guide ring

Guttering mould cutter with guide ring

Application:
Router for cutting cove moulds.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutting edges with shear angle, ball bearing guide ring on bottom for use with templates or guide rail system.

HW, Z 2
WO 551 1, WO 551 1 02

D	GL	NL	S	R	DRI	ID
mm	mm	mm	mm	mm		
25.5	54	12.7	8x30	6.35	RH	**072471** □
28.8	56	14	8x30	8	RH	**072473** □
31.7	56	14.3	8x30	9.5	RH	**072475** □
38.1	57	16	8x30	12.7	RH	**072477** □

RPM: n = 18000 - 27000 min^{-1}

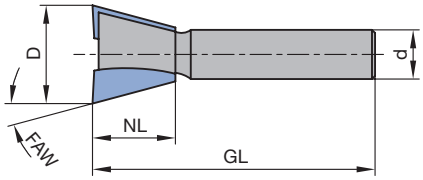
Spare parts:

BEZ	ABM	ID
	mm	
Ball bearing	12.7x4.97x4.76	**008088** ●
Cap screw	M4x10	**005846** ●

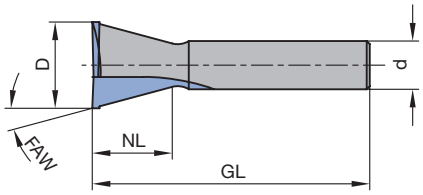
● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HS

HW



Dovetail cutter without spurs



Dovetail cutter with spurs

Dovetail cutter

Application:
Routers for dovetail joints.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutting edges with shear angle. Design with spurs for increased cutting quality.

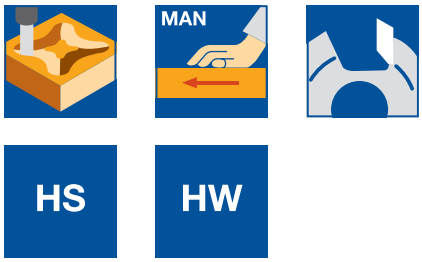
HS/HW, Z 2, shank 8 mm, without spurs
WO 610 1, WO 612 1

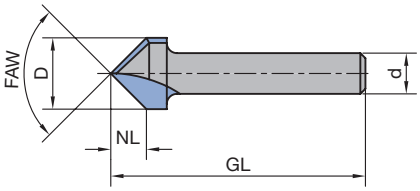
D mm	GL mm	NL mm	S mm	FAW °	QAL	DRI	ID
13.8	46	13.5	8x30	15°	HS	RH	**072757** □
20	49	17	8x30	15°	HS	RH	**072411** □
13.8	46	13.5	8x30	15°	HW	RH	**072758** □
16	46	13.5	8x30	15°	HW	RH	**072045** □
20	49	17	8x30	15°	HW	RH	**072417** □
14.3	50	16	8x30	10°	HW	RH	**072585** □
20	58	26	8x30	10°	HW	RH	**072583** □

HS/HW, Z 2, shank 8 mm, with spurs
WO 612 1

D mm	GL mm	NL mm	S mm	FAW °	QAL	DRI	ID
14.3	46	13.5	8x30	15°	HW	RH	**070361** □

RPM: n = 18000 - 27000 min^{-1}





V-groove / engraving cutter

V-groove / engraving cutter

Application:
Routers for cutting V-grooves and engraving.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutting edges with shear angle. Z 1 suitable for fine engraving operations.

HS/HW, Z 1
WO 531 1

D mm	GL mm	NL mm	S mm	FAW °	QAL	DRI	ID
11	50	9.5	8x30	60°	HW	RH	**070562** □
11	55	9.5	8x30	60°	HS	RH	**070262** □

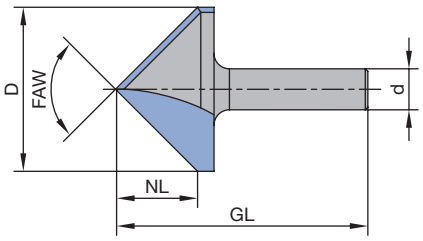
HS/HW, Z 2
WO 531 1

D mm	GL mm	NL mm	S mm	FAW °	QAL	DRI	ID
11	50	9.5	8x30	60°	HS	RH	**072421** □
14	50	7	8x30	90°	HS	RH	**072423** □
14	50	7	8x30	90°	HW	RH	**072425** □

RPM: n = 18000 - 27000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



V-groove cutter for plasterboard

V-groove cutter for plasterboard

Application:
Router for cutting V-grooves in plasterboard for folding.

Machine:
Portable routers.

Workpiece material:
Plasterboard and gypsum fibre, softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

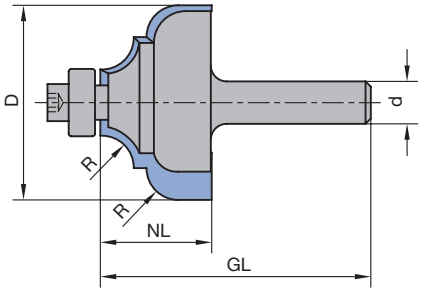
Technical information:
Cutting edges with shear angle, flat point designed for folding.

HW, Z 1 / Z 2
WO 531 1

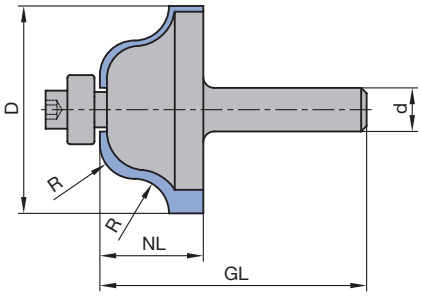
D mm	GL mm	NL mm	S mm	FAW °	QAL	Z	DRI	ID
12.5	55	14	8x30	45°	HW	1	RH	**072618** □
32	49	16	8x30	90°	HW	2	RH	**070673** □

RPM: n = 18000 - 27000 min^{-1}

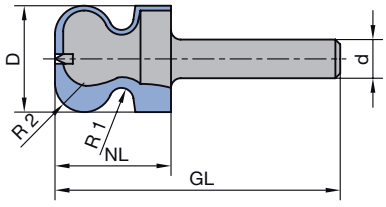

HW



Profile cutter with guide ring WO 551 1



Double radius cutter with guide ring WO 531 1



Finger pull cutter WO 532 1

Profile cutter

Application:
Router cutter for profiling.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Cutting edges with shear angle. With guide ring for guiding along the workpiece edges. Finger pull cutter for cutting a covered grip rail on furniture fronts.

HW, Z 2, profile cutter, with guide ring
WO 551 1

D	GL	NL	S	R	DRI	ID
mm	mm	mm	mm	mm		
36.7	61	21	8x30	6	RH	**072511** □

Spare parts:

BEZ	ABM	ID
	mm	
Ball bearing	12.7x4.97x4.76	**008088** ●
Cap screw	M4x10	**005846** ●

HW, Z 2, double radius cutter, with guide ring
WO 551 1

D	GL	NL	S	R	DRI	ID
mm	mm	mm	mm	mm		
31.7	53	13	8x30	4	RH	**072481** □
38.1	59	19	8x30	6.35	RH	**072483** □

Spare parts:

BEZ	ABM	ID
	mm	
Ball bearing	12.7x4.97x4.76	**008088** ●
Cap screw	M4x10	**005846** ●

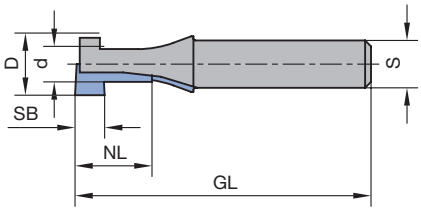
HW, Z 2, finger pull cutter
WO 532 1

D	GL	NL	S	R1	R2	DRI	ID
mm	mm	mm	mm	mm	mm		
22	59	16	8x30	2.5	6	RH	**072624** □

RPM: n = 18000 - 27000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



T-groove cutter

T-groove cutter

Application:
Router for cutting T-grooves and keyholes.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

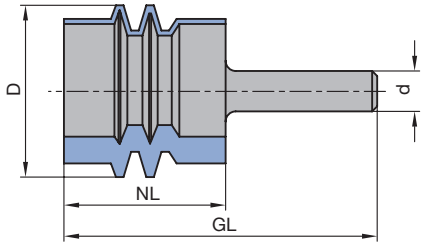
Technical information:
Straight cut.

HW, Z 1
WO 120 1

D mm	d mm	SB mm	GL mm	NL mm	S mm	QAL	DRI	ID
10.5	6.5	5	50	13	8x30	HW	RH	**072526** □

RPM: n = 18000 - 27000 min^{-1}

HW



Glue joint cutter

Glue joint cutter

Application:
Routers for cutting glue joint profiles.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Straight cut. Guide by side stop or guide rail system.

HW, Z 2
WO 631 1

D mm	GL mm	NL mm	HD mm	S mm	QAL	DRI	ID
34	62	32	30	8x30	HW	RH	**072197** □

RPM: n = 18000 - 27000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org


HW

Spiral grooving cutter

Application:
Router for sizing and grooving.

Machine:
Portable routers.

Workpiece material:
Solid surface material (Corian, Varicor etc.).

Technical information:
Solid tungsten carbide design, spiral-shaped edges, ground plunging edge.

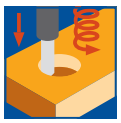
HW, Z 2, spiral roughing/finishing cutter
WO 160 2 04

D mm	GL mm	NL mm	S mm	Twist	DRI	ID
12	87	42	12x40	LD	RH	**072707** □

HW, Z 2, spiral finishing cutter
WO 160 2 05

D mm	GL mm	NL mm	S mm	Twist	DRI	ID
10	70	25	10x40	RD	RH	**042458** ●
12	70	25	12x40	RD	RH	**042758** ●
12	87	42	12x40	RD	RH	**072705** □

RPM: n = 18000 - 27000 min^{-1}


Turnblade grooving cutter

Application:
Router cutter for sizing and grooving.

Machine:
Portable routers.

Workpiece material:
Solid surface material (Corian, Varicor etc.).

Technical information:
Straight cut. Design with plunging tip limited suitable for axial plunging.

HW, Z 1, with plunging tip
WL 100 1

D mm	GL mm	NL mm	S mm	DRI	ID
14	107	45	12x40	RH	**041722** ●

RPM: n = 16000 - 24000 min^{-1}

Spare knives:

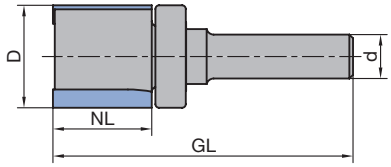
BEZ	ABM mm	NL mm	QAL	VE PCS	ID
Turnblade knife	50x5.5x1.1	50	HW-05	10	**005191** ●

Spare parts:

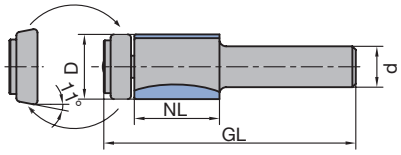
BEZ	ABM mm	ID
Clamping wedge with plunging tip	45x3.7x7.35	**009749** ●
Countersink screw, Torx® 8	M3x7.6	**006233** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

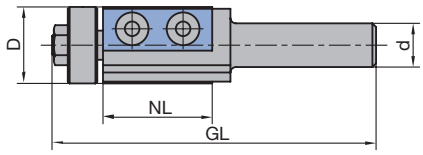

HW



Edge trimming cutter with guide ring on top



Edge trimming cutter with guide ring on bottom



Turnblade edge trimming cutter with guide ring on bottom

Edge trimming cutter with guide ring

Application:
Router for trimming protrusions of glued solid surface material construction parts.

Machine:
Portable routers.

Workpiece material:
Solid surface material (Corian, Varicor etc.).

Technical information:
Straight cut. Plastic covered ball bearing guide ring for protection against marks on the workpiece.

HW, Z 2, with guide ring on top
WO 203 1

D mm	GL mm	NL mm	S mm	DRI	ID
28	80	25	12x40	RH	**072697** □

Spare parts:

BEZ	ABM mm	ID
Ball bearing guide	28x8.3x15	**072712** ●

HW, Z 2, with guide on bottom
AO 640 1

D mm	GL mm	NL mm	S mm	DRI	ID
19	74	25	12x40	RH	**072709** □

Spare parts:

BEZ	ABM mm	ID
Ball bearing guide	19x8x4.76	**072630** ●
Ball bearing guide	22x8x4.76/11°	**072711** ●
Oval head screw Torx® 15	M4x8	**007407** ●

HW turnblade, Z 2, with guide ring on bottom
WL 220 1

D mm	GL mm	NL mm	S mm	DRI	ID
21	89	30	12x40	RH	**072220** □

RPM: n = 18000 - 27000 min^{-1}

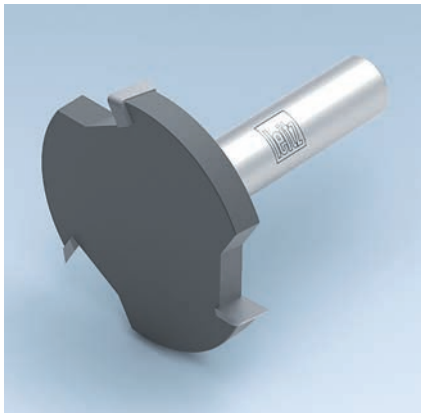
Spare knives:

BEZ	ABM mm	VE PCS	ID
Turnblade knife	30x12x1.5	10	**005161** ●

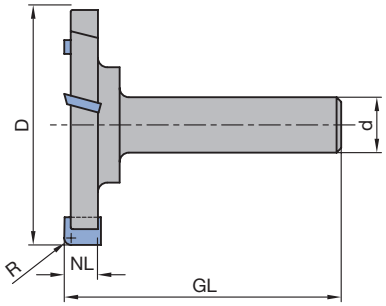
Spare parts:

BEZ	ABM mm	ID
Ball bearing guide	15.88x21x8.1	**072255** ●
Nut	M6	**005651** ●
Oval head screw Torx® 15	M4x6	**006225** ●
Torx® key	Torx® 15	**005457** ●

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org



HW



Planing cutter Z 3

Planing cutter

Application:
Router for cutting panel raising profiles.

Machine:
Portable routers.

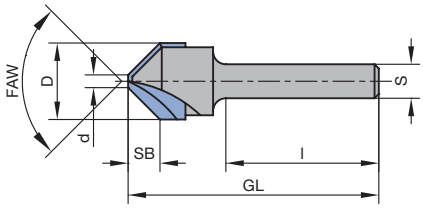
Workpiece material:
Solid surface material (Corian, Varicor etc.).

Technical information:
Optimised cutting geometry for clean planed surface. Also suitable for edge trimming of installed sinks of solid surface material.

HW, Z 3
WO 110 1

D mm	GL mm	NL mm	S mm	n_{max} min^{-1}	DRI	ID
52	60	7.3	12x40	27000	RH	**072693** □

HW



V-groove cutter for composite panels

V-groove cutter for composite panels

Application:
Routers for cutting V-grooves in composite panels for folding operations.

Machine:
Portable routers.

Workpiece material:
Composite panels based on thermoplastic cores with aluminium coverage on both sides (e.g. Alucobond®, Dibond® etc.).

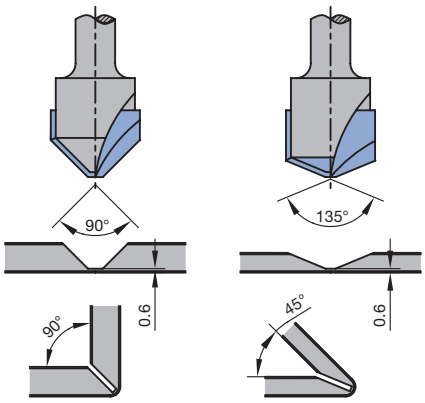
Technical information:
Stable edges, flat point for folding operations.

HW, Z 2
WO 531 2

D	d	GL	NL	S	FAW	QAL	Z	DRI	ID
mm	mm	mm	mm	mm	°				
18	3	59	8	8x39	90°	HW	2	RH	**070564** □
18	2	59	3.3	8x39	135°	HW	2	RH	**070565** □

RPM: n = 18000 - 27000 min^{-1}

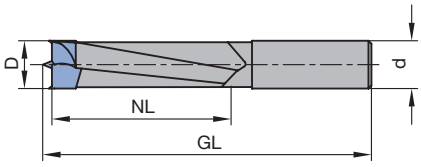
Application example:



Production of folding corners on composite panels

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



Dowel drill Z 2 / V 2

Dowel drill, HW, Z 2 / V 2

Application:
For drilling blind holes, particularly dowel holes in furniture construction.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

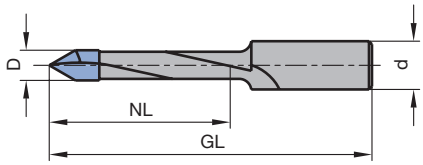
Technical information:
Spurs geometry with shear cut. Tool body with reduced diameter for minimum friction and feed force. Cylindrical shank without clamping flat.

Dowel drill, HW, Z 2 / V 2
WB 101 0, WB 120 0

D	GL	NL	S	DRI	ID
mm	mm	mm	mm		
3	55	16	8x30	RH	**072597** □
5	60.5	30	8x27	RH	**072752** □
6	60.5	30	8x27	RH	**072753** □
8	60.5	30	8x27	RH	**072754** □
10	60.5	30	8x27	RH	**072755** □

RPM: n = 3000 - 9000 min^{-1}

HW



Through hole drill Z 2

Through-hole drill, HW, Z 2

Application:
For drilling through holes in furniture construction.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Conical tip design for tear-free through-holes. Tool body with reduced diameter for minimum friction and feed force. Cylindrical shank without clamping flat.

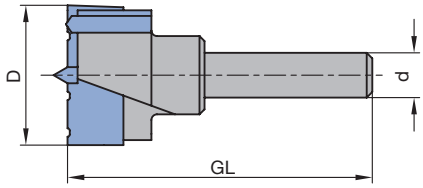
Through-hole drill, HW, Z 2
WB 101 0

D mm	GL mm	NL mm	S mm	DRI	ID
5	60.5	30	8x27	RH	**072756** □

RPM: n = 3000 - 9000 min^{-1}

● available ex stock
□ available at short notice
Instruction manual visit www.leitz.org

HW



Hinge boring bit Z 2 / V 2

Hinge boring bit

Application:
For drilling hinge holes in furniture construction.

Machine:
Portable routers.

Workpiece material:
Softwood and hardwood, chipboard and fibre materials (MDF, HDF etc.), uncoated, plastic coated, veneered etc., laminated veneer lumber (plywood, multiplex plywood etc.).

Technical information:
Good centering in solid wood by centre point. Minimised friction by relief ground spurs and raker edge with chip breakers. Cylindrical shank without clamping flat.

HW, Z 2 / V 2
WB 310 0

D	GL	S	DRI	ID
mm	mm	mm		
15	54.5	8x30	RH	**034660** ●
18	54.5	8x30	RH	**072596**
20	54.5	8x30	RH	**072012**
22	54.5	8x30	RH	**072740** ●
25	54.5	8x30	RH	**034656** ●
26	54.5	8x30	RH	**034658** ●
30	54.5	8x30	RH	**034657** ●
34	54.5	8x30	RH	**072196** ●
35	54.5	8x30	RH	**034659** ●

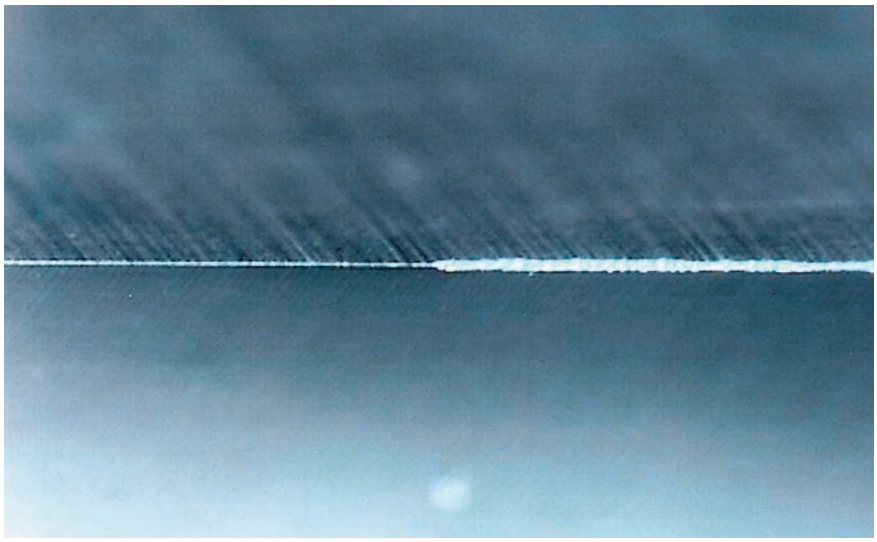
RPM: n = 3000 - 9000 min^{-1}

Problem	Possible cause	Action
Chatter marks Loud cutting noise	– Wrong removal rate	Adjust feed speed and RPM for cutting depth to the chart on the product page. If necessary, machine the cutting depth in 2 steps or precut with roughing router cutter.
	– Incorrectly adjusted tool dimensions	Use a more solid tool with largest possible shank and tool diameters and short working length. Select tool with staggered or spiral cutting edges.
	– Vibrations of the tool spindle system	Note minimum shank clamping length. $l_{e\ min}$ = 2 x shank diameter. Do not machine with long or secondary chucks. Use short chunks (PM 320 0 53) or shrink clamping devices. Check and, if necessary, repair machine guides and motor bearings.
	– Insufficient clamping of workpiece	Increase vacuum clamping. Clamp waste. Improve workpiece clamping by mechanical clamping, friction or fastening with screws.
Marks on the workpiece from tools with staggered cutting edges **Note:** Tools with staggered cutting edges cannot produce surfaces free of marks due to minor tolerances in concentricity. In MDF and solid wood, concentricity inaccuracies of 0.03 mm are visible.	– Errors in concentric running of clamping chuck, motor spindle or tool	To identify cause, turn tool 90° in the chuck and cut again: A change in the marks on the workpiece point to chuck error. Most accurate concentricity is achieved using hydro chucks or shrink chucks. Constant cutter marks point to a defective tool which should be repaired or exchanged.
	– Unstable spindle bearing	Select short chucks. Do not use extension pieces.
Tool breakage of shank cutters	– Cutting depth or feed speed too high	Adjust application data to chart on the product page.
	– Wrong tool clamping	Note minimum shank clamping length. $l_{e\ min}$ = 2 x shank diameter. Do not machine with long or extension chunks. Use short chucks (PM 320 0 53) or shrink-clamping chucks.
	– Incorrectly adjusted tool dimensions	Use a more solid tool with the largest possible shank and tool diameters and shortest working length. Select tool with staggered or spiral cutting edges.
	– Inadequate tool clamping (critical with solid HW tools)	Check chuck clamping area for burrs or dirt.
	– Damage from loose waste pieces	Clamp waste pieces. Hog small pieces when shaping.
	– Machine vibrations	Check machine guide and motor bearings. Check balance of clamping chuck.
Cutting edge breakages on DP (DIA) router bits	– Vibrations of tool spindle	Check balance, contamination and concentricity of the clamping chuck.
	– Vibrations at the workpiece due to insufficient support	Clamp tool as close as possible to the profile. Make vacuum clamping areas as large as possible. Clamp waste pieces.

Continuous wear of cutting edges
Mechanical abrasion causes continuous wear of the cutting edge when machining largely uniform materials.

The degree of permissible wear is determined by the required machined quality. As a standard the width of wear VB of 0.2 up to maximum 0.3 mm should not be exceeded.

Tipped tools must be resharpened in good time to ensure the economic efficiency of the tool.

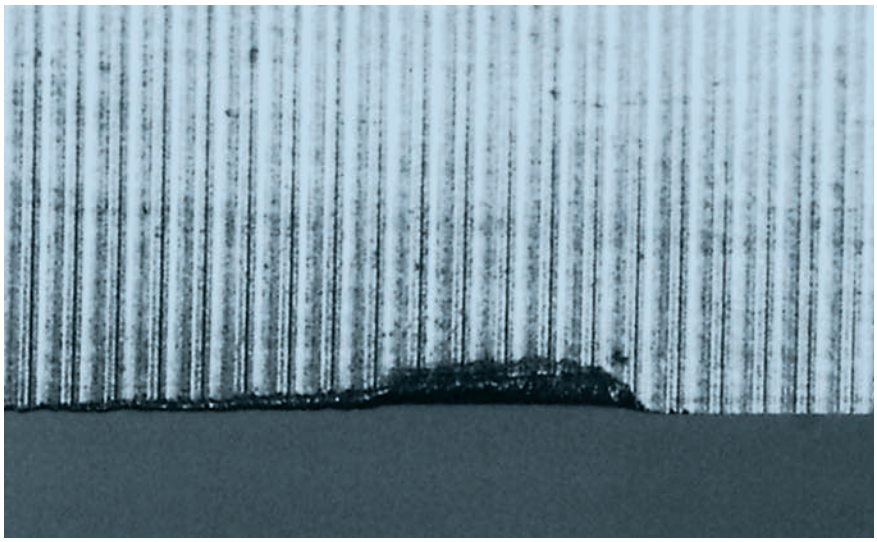


Normal cutting edge wear after machining of spruce.

Local cutting edge wear
Irregular cutting edge wear is caused when machining non-uniform panel materials (e.g. coated chipboard or laminate floors).

The highest abrasion occurs in the area of more densely pressed surface layers with higher sand content. This local abrasion defines the quality of the machined edge and determines the end of the tool life.

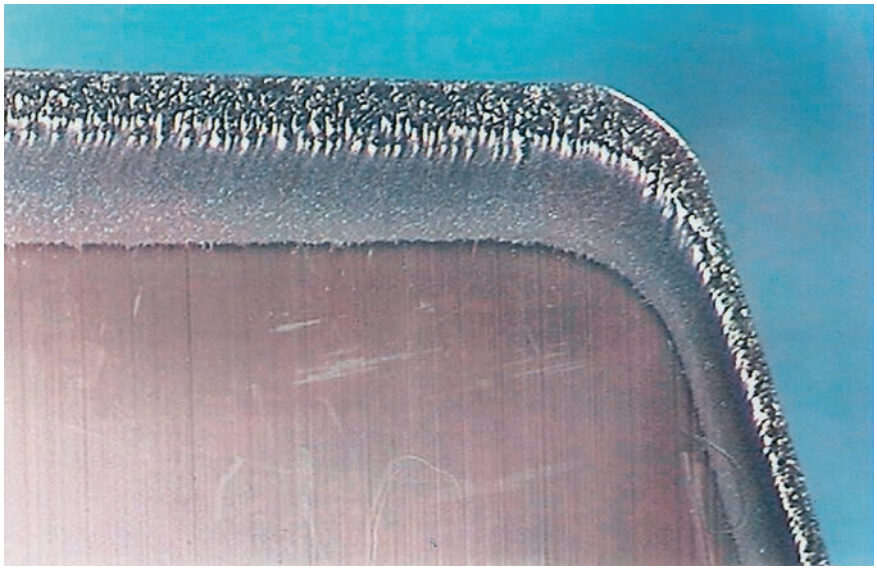
If the machining situation allows axial adjustment tool, a sharp section of cutting edge can be used to machine the edge, increasing the tool performance time.



Cutting edge wear after machining chipboard.

Chemical abrasion
When machining materials with a high tannic acid content (e.g. oak) the cutting edge is subject to chemical abrasion in addition to mechanical abrasion.

The cobalt binder material in the tungsten carbide is etched away through chemical abrasion, damaging the cutting material.



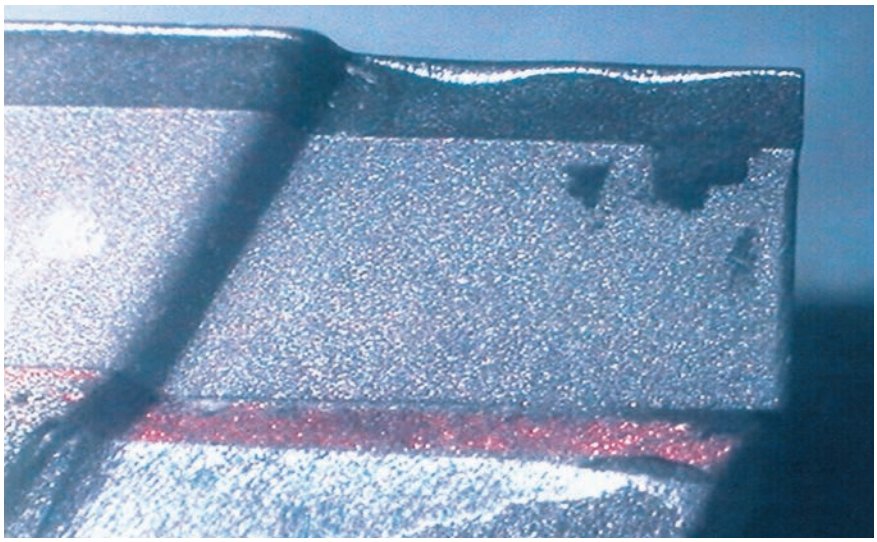
Chemical influence – cutting edge wear – after machining of oak.

Cutting edge wear
Mechanical abrasion causes continuous wear of the cutting edge when machining largely uniform materials.

The degree of the permissible wear is determined by the required machined quality. As a standard the width of wear VB of 0.2 up to maximum 0.3 mm should not be exceeded.

Because of the long performance time, resin can build up on cutting edges.

Performance time can be increased by regular cleaning.

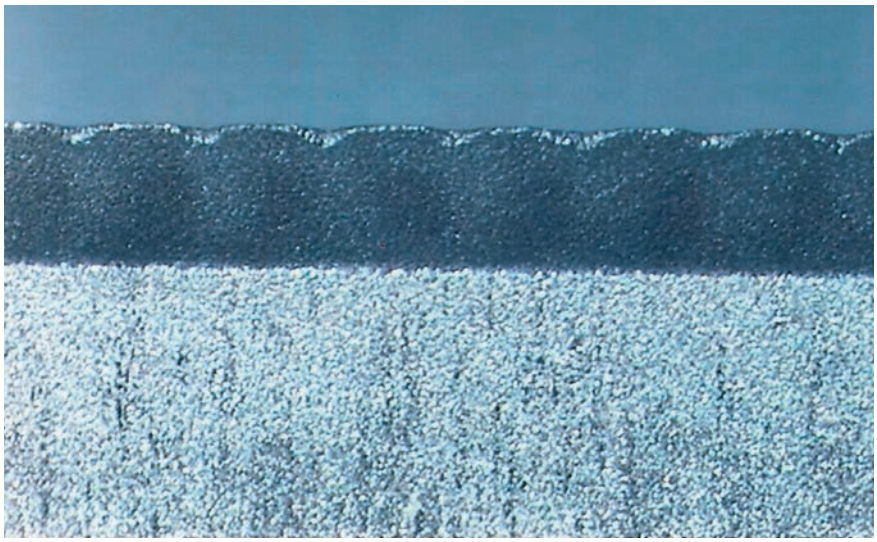


Cutting edge wear after machining GFK.

Cutting edge wear and small fractures
When machining some wood derived and composite materials the cutting edge is damaged by small fractures as well as the usual wear.

This is usually caused by hard mineral particles in the workpiece material.

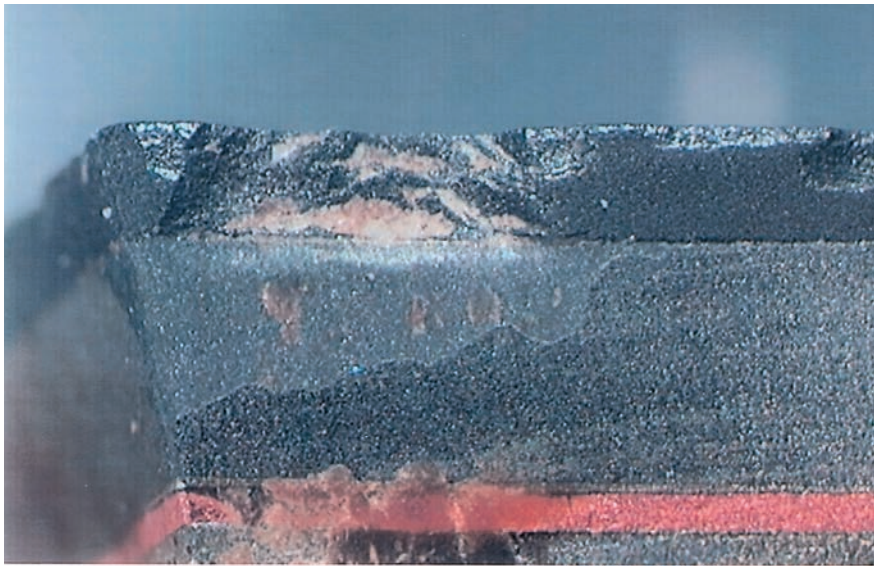
Fractures at the cutting edge can also be caused by high frequency machine vibrations. Imbalanced tools and chucks, worn spindles or machining close to a resonant RPM may cause such vibrations.



Cutting edge wear and fractures after machining HPL/CPL.

Cutting edge destruction
The cutting edge can be destroyed when machining non-uniform materials containing mineral or metallic particles.

These particles cannot be detected prior to machining and limit the use of DP tools for machining such materials.



Cutting edge destruction by metallic particles embedded in the workpiece.

Enquiry/order form special tools – routing

Customer details: Customer number: (if known) ☐☐☐☐☐☐☐☐

☐ Enquiry
☐ Order

Delivery date: (not binding) ☐☐ CW

Company:

Street:

Post code/place:

Country:

Phone/fax:

Contact person:

Signature:

Date:

Enquiry/order no.:

Tool ID: (if known)

Quantity:

Workpiece material:

Solid wood Type:
Wood-derived material Type:
Other Type:

Direction of machining for solid wood or veneered workpieces:
☐ along grain
☐ across grain

Type of coating:
Additional information:

Machine:

Manufacturer:

Range of RPM: min^{-1}
Adaptor
(e.g. SK 30, HSK-F 63 etc.):

Tool:

Tool type (see selection pages):
Dimensions:
Diameter: mm
Cutting width: mm
Shank diameter: mm
No. of teeth:

Cutting material:
☐ HS
☐ HW
☐ ST
☐ DP

Direction of rotation:
☐ left hand
☐ right hand

Type of feed:
☐ Mech. feed
☐ Manual feed

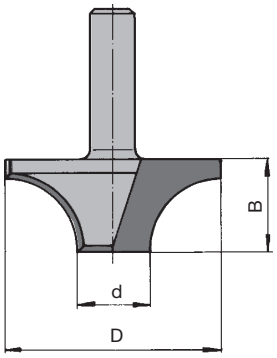
State profile with sketch or drawing:
☐ Cutting on periphery only
☐ Cutting in end grain (ramp plunging possible)
☐ For plunging in z-axis

Arrangement of cutting edges:
☐ with shear angle on one side
☐ with alternate shear angle

☐ Please tick the appropriate box

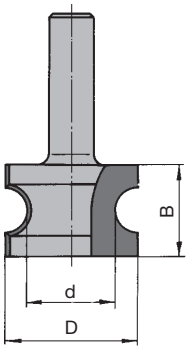
Examples for profile groups 1 and 2:

WO 521 1
open profile



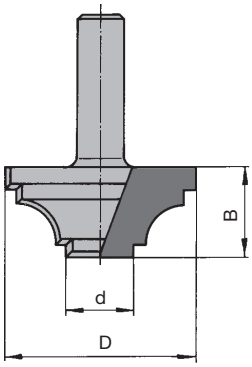
Profile group 1:
cutting on periphery
with bottom knife for
cutting in end grain

WO 522 1
closed profile



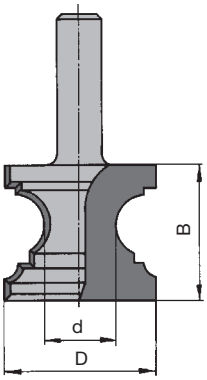
Profile group 1:
cutting on periphery

WO 521 2
open profile



Profile group 2:
cutting on periphery
with bottom knife for
cutting in end grain

WO 522 2
closed profile



Profile group 2:
cutting on periphery
with bottom knife for
cutting in end grain

Sketch for application plan, profile drawing, special motor spindle etc.
Enter on sketch which side of workpiece to table i.e. face side on top/bottom

Key to pictograms


Drilling
blind holes


Slotting


Spiral drilling


Non-axial drilling


Carving


Grooving,
sizing


Finish sizing


Grooving,
horizontal
and vertical


Jointing


Rebating


Bevelling


Panel raising


Profiling


Profiling
joints


Jointing


Grooving

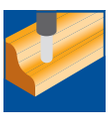

Slotting,
cut-off milling


Axial
drilling


Engraving


Bevelling


Pocket milling


Contour
milling


Ramping

Corner
chamfer 30°

Corner
chamfer 45°

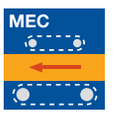

Compression milling,
delamination-free
machining


Machining direction
three-dimensional


Machining direction
three-dimensional

Corner radius


Free neck



Mechanical
feed

Manual
feed


Solid metal
tool


Tipped tool

Special body
alloy

Light alloy
body


Interchangeable
knives


Mechanical
knife clamping,
reversible


Mechanical
knife clamping,
adjustable
- serrated


Resharpenable
cutting face


Resharpenable
clearance face

Low noise

Optimised
chip flow

Alloyed
tool steel

High-speed
steel

Tungsten
carbide

Polycrystalline
diamond (PCD)

Carbide
metal coating

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