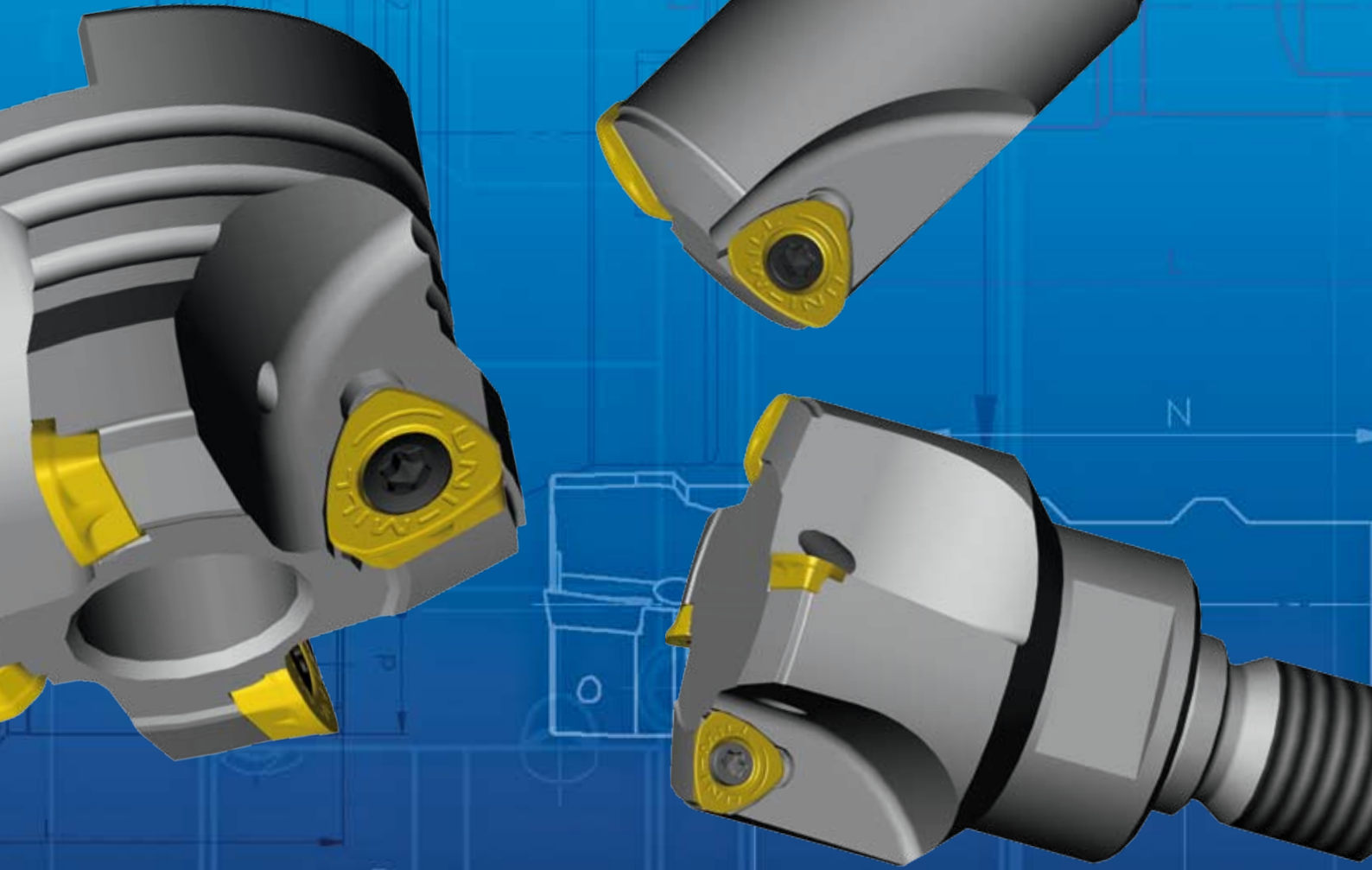




Jongen Werkzeugtechnik GmbH & Co. KG

# POWERMILL

by Jongen

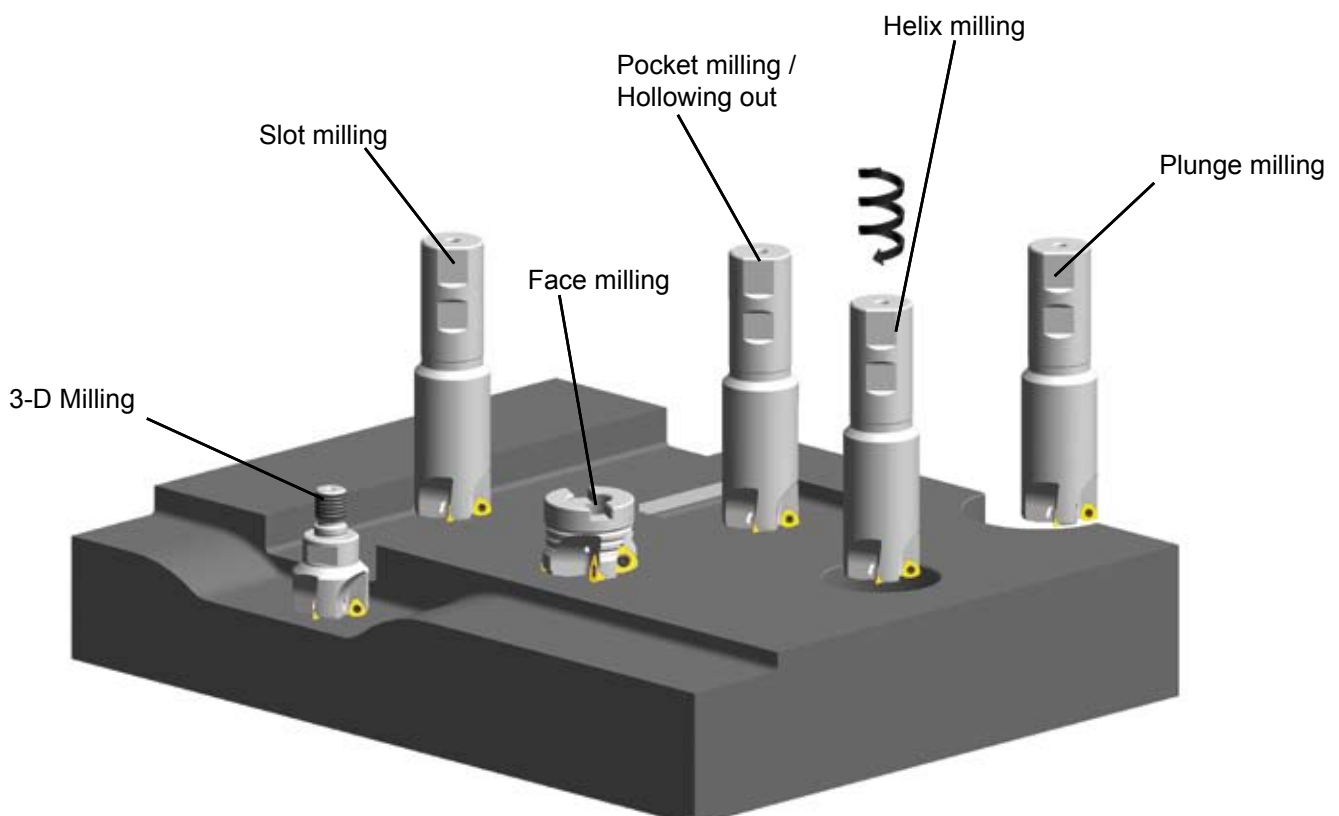


## Features:

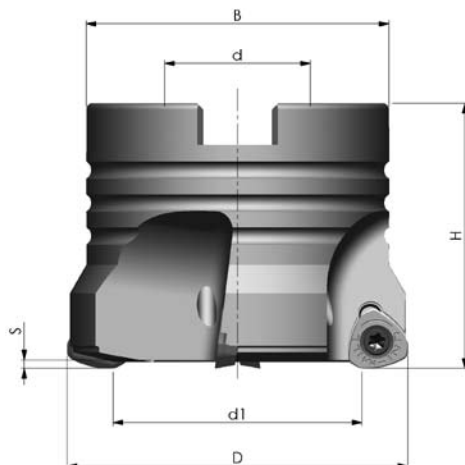
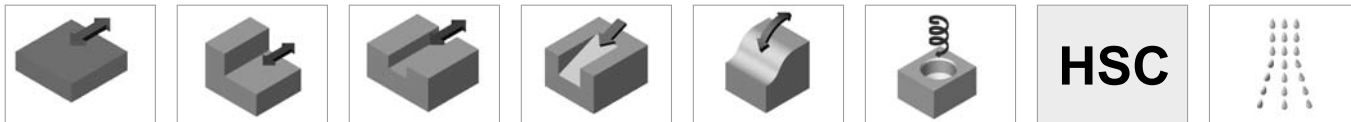
- ☞ Highest feed rates with axial feed increment up to 2,5/3,5 mm
- ☞ Positive cutting geometry for axial feed increment
- ☞ Almost no radial cutting power

## Advantages:

- ☞ High chip volume per minute for low working time
- ☞ Suitable for almost all materials
- ☞ Applicable for great reaches
- ☞ Contour roughing possible
- ☞ Extreme stable inserts
- ☞ Very hard tools
- ☞ Different tool types allow flexible applications areas: Shell milling cutters, screw-in cutters, shank milling cutters with coupling made to DIN 1835-B, shank milling cutters without Weldon for big clamped lengths.
- ☞ Shell milling cutters with coupling made to DIN 8030 with internal coolant feed
- ☞ Screw-in cutters with internal coolant feed
- ☞ Shank milling cutters with coupling made to DIN 1835-B, with internal coolant feed
- ☞ Shank milling cutter without Weldon similar to DIN 1835-A, without internal coolant feed

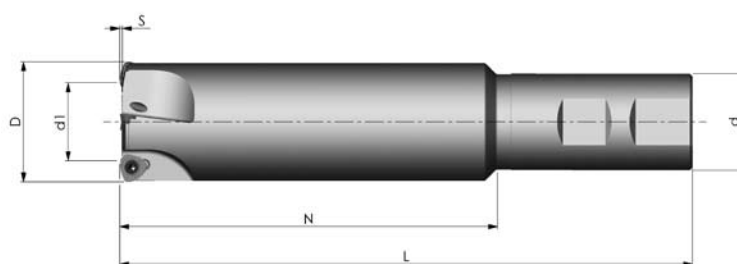


## Product group 540:



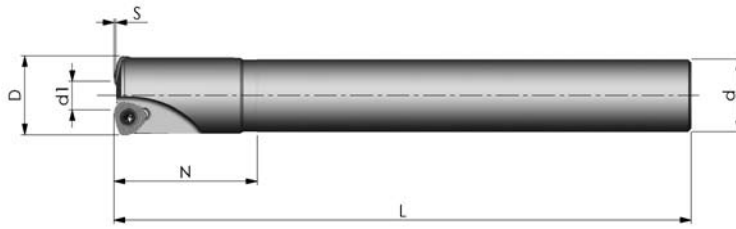
Order-No.	D	d <sub>1</sub>	H	d	B	S	Z	MS
00PP-040-540-4	40	26,4	40	16	32	1,0	4	MS-8x25-912
00PP-042-540-4	42	28,4	40	16	32	1,0	4	MS-8x25-912
00PP-050-540-4	50	36,4	40	22	46	1,0	4	MS-10x25-912
00PP-052-540-4	52	38,4	40	22	46	1,0	4	MS-10x25-912
00PP-063-540-5	63	49,3	50	27	54	1,0	5	MS-12x35-912
00PP-066-540-5	66	52,3	50	27	54	1,0	5	MS-12x35-912

MS = Central Screw



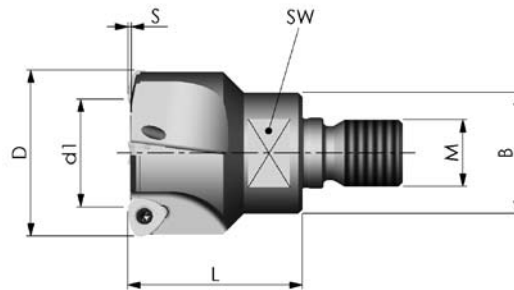
The tool coupling is made to DIN 1835-B (Weldon)

Order-No.	D	d <sub>1</sub>	L	d	N	S	Z
00PP-20-540-2-80	20	8,3	135,5	20	80	1,0	2
00PP-22-540-2-80	22	10,2	135,5	20	80	1,0	2
00PP-25-540-3-80	25	12,6	141,5	25	80	1,0	3
00PP-25-540-3-125	25	12,6	186,5	25	125	1,0	3
00PP-32-540-3-80	32	19,0	141,5	25	80	1,0	3
00PP-32-540-3-125	32	19,0	186,5	25	125	1,0	3
00PP-40-540-4-80	40	26,4	145,5	32	80	1,0	4
00PP-40-540-4-125	40	26,4	190,5	32	125	1,0	4

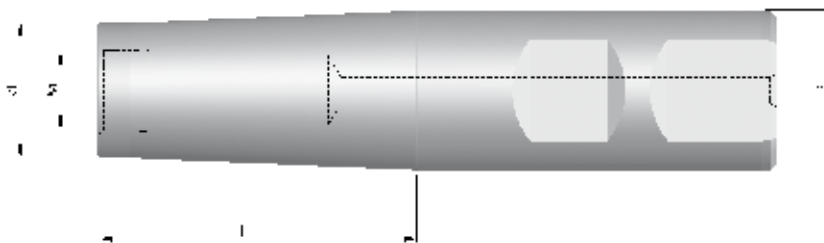


The tool coupling is made to DIN 1835-A (without Weldon)

Order-No.	D	d <sub>1</sub>	L	d	N	S	Z
00PP-20-540-2-160	20	8,3	160	20	35	1,0	2
00PP-22-540-2-160	22	10,2	160	20	40	1,0	2
00PP-25-540-3-170	25	12,6	170	25	35	1,0	3
00PP-32-540-3-195	32	19,0	195	25	40	1,0	3
00PP-40-540-4-195	40	26,4	195	32	40	1,0	4

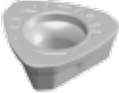



Order-No.	D	d <sub>1</sub>	L	M	B	SW	S	Z
ESF-20-M10-540-2	20	8,3	28	M10	18,5	SW16	1,0	2
ESF-22-M10-540-2	22	10,2	28	M10	21,0	SW16	1,0	2
ESF-25-M12-540-3	25	12,6	32	M12	24,0	SW18	1,0	3
ESF-32-M16-540-3	32	19,0	42	M16	31,0	SW24	1,0	3
ESF-35-M16-540-3	35	21,4	42	M16	29,0	SW24	1,0	3
ESF-40-M16-540-4	40	26,4	42	M16	29,0	SW24	1,0	4
ESF-42-M16-540-4	42	28,4	42	M16	29,0	SW24	1,0	4






Order-No.	D	M	d	l
FS20W-M10-25	20	M10	18	25
FS20W-M10-45	20	M10	18	45
FS25W-M12-30	25	M12	21	30
FS25W-M12-50	25	M12	21	50
FS32W-M16-30	32	M16	29	30
FS32W-M16-50	32	M16	29	50

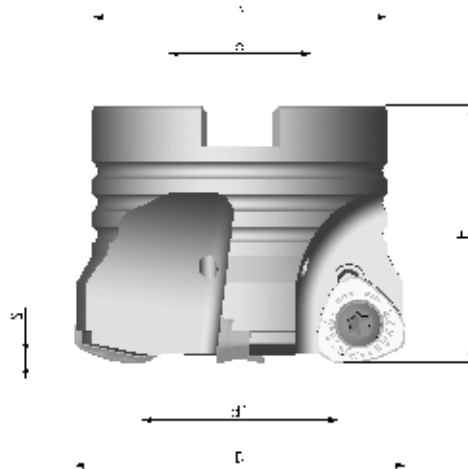
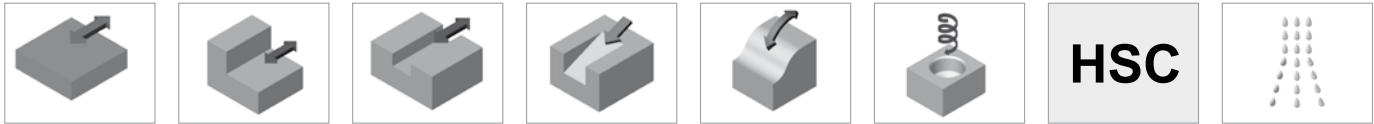
## Inserts:

	<b>FP 540 HT50</b> <b>FP 540 KT28</b>	Dimension: Internal diameter 7,85x3,0 Insert seat: A11 Precision sintered, Chamfered cutting edge  Packing units: 20 piece
	<b>FP 640 HT50</b> <b>FP 640 HT30</b>	Dimension: Internal diameter 7,85x3,0 Insert seat: A11 Precision sintered with chip-breaker groove  Packing units: 20 piece

## Spare parts:

	<b>SS3,0-1</b>	Fixing screw
	<b>T09</b>	Screwdriver
	<b>100g</b>	Heavy duty grease

**Product group 545:**



Order-No.	D	d <sub>1</sub>	H	d	B	S	Z	MS
00PP-050-545-4	50	29,6	40	22	46	1,35	4	MS-10x25-912
00PP-052-545-4	52	31,6	40	22	46	1,35	4	MS-10x25-912
00PP-063-545-5	63	42,5	50	27	54	1,35	5	MS-10x30-912
00PP-066-545-5	66	45,5	50	27	54	1,35	5	MS-10x30-912
00PP-080-545-5	80	59,5	50	32	64	1,35	5	MS-16x30-912
00PP-100-545-6	100	79,5	50	32	64	1,35	6	MS-16x30-912
00PP-125-545-7	125	104,5	50	40	90	1,35	7	MS-20x45-7991
00PP-160-545-8	160	140,0	50	40	90	1,35	8	MS-20x45-7991

MS = Central Screw

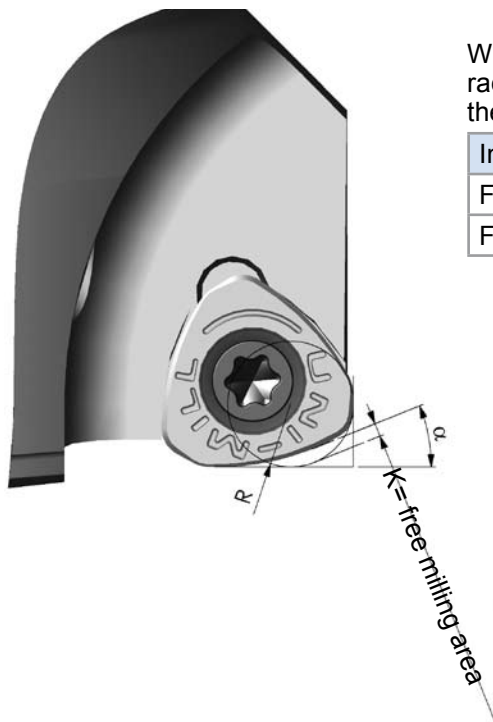
**Inserts:**

	<b>FP 545 HT50</b> <b>FP 545 KT28</b>	Dimension: Internal diameter 11,8x5,0    Insert seat: A12 Precision sintered, Chamfered cutting edge  Packing units: 20 piece
	<b>FP 645 HT50</b> <b>FP 645 HT30</b>	Dimension: Internal diameter 11,8x5,0    Insert seat: A12 Precision sintered with chip-breaker groove  Packing units: 20 piece

**Spare parts:**

	<b>SS4,5-1</b>	Fixing screw
	<b>T20</b>	Screwdriver
	<b>100g</b>	Heavy duty grease

## Indications of application:



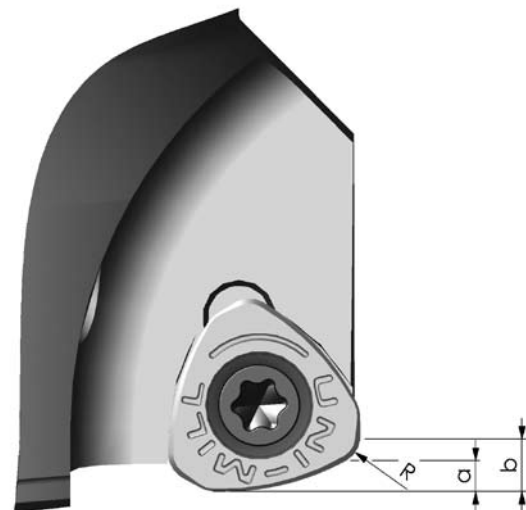
With the application of the PowerMill the insert radius has to be considered by programming the milling operation . –see table –

Insert	R	K	$\alpha$
FP 540/640	3	0,63	22,0°
FP 545/645	4	1,08	24,3°

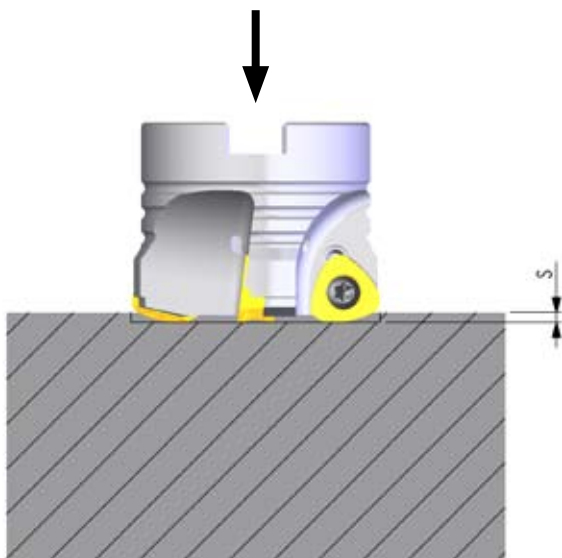
### Feed:

If the feed increment is bigger than "a", the feed rate per tooth must be reduced to 30%. Max. feed increment see "b".

Insert	a	b	R
FP 540/640	1,50	2,5	1,3
FP 545/645	2,15	3,5	2,0

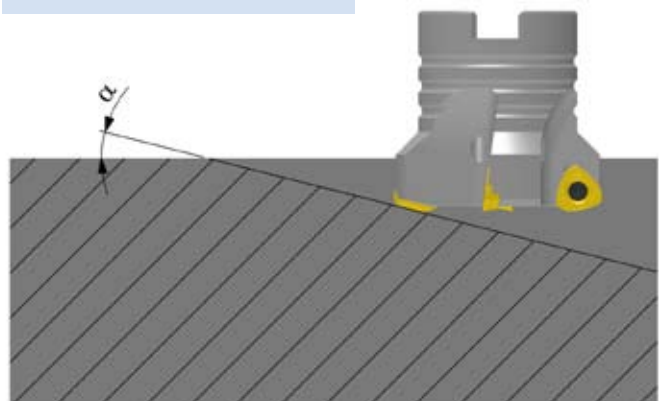


## Slot milling by ramping:

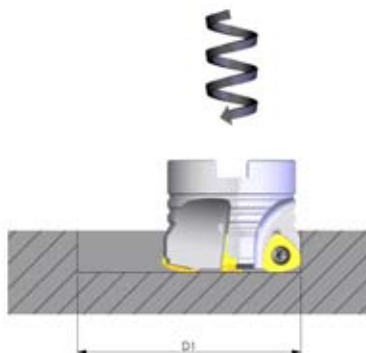


Angle of immersion a max.:

FP 540/640 = 1,5°  
FP 545/645 = 2,0°



## Helix milling without pre-drilling:



With the helix milling 50% of the normal feed rate per tooth is recommended  
The depth of immersion per turning should not exceed "a" see page 7.

FP 540/640 ø Tool	ø D1 min	ø D1 max. (node formation)
20	24	40
22	26	44
25	32	50
32	46	64
35	52	70
40	62	80
42	66	84
50	82	100
52	86	104
63	108	126
66	114	132

FP 545/645 ø Tool	ø D1 min	ø D1 max. (node formation)
50	82	100
52	86	104
63	108	126
66	114	132
80	142	160
100	182	200
125	232	250
160	302	320

## Cutting data recommendations:

Material	Hardness	Coating type	Vc (m/min)	FP 540 = F <sub>z</sub> (mm)	FP 640 = F <sub>z</sub> (mm)	FP 545 = F <sub>z</sub> (mm)	FP 645 = F <sub>z</sub> (mm)
Unalloyed steel, Structural steel	≤ 280 HB	HT50	300 (180-350)	1,0 (0,5-2,5)	0,7 (0,5-2,5)	2,0 (1,0-3,0)	1,5 (1,0-3,0)
Low alloy steel	≤ 35 HRC	HT50	250 (150-300)	1,0 (0,5-2,5)	0,7 (0,5-2,5)	2,0 (1,0-3,0)	1,5 (1,0-3,0)
High grade steel	≤ 43 HRC	HT50/ HT30	250 (150-320)	1,0 (0,5-2,5)	0,7 (0,5-2,5)	2,0 (1,0-3,0)	1,5 (1,0-3,0)
Stainless steel, High grade steel	≤ 800 N/mm <sup>2</sup>	HT50/ HT30	240 (150-320)	1,0 (0,5-2,5)	0,7 (0,5-2,5)	1,5 (1,0-3,0)	1,5 (1,0-3,0)
Grey cast iron	≤ 350 N/mm <sup>2</sup>	KT28	200 (160-320)	1,0 (0,5-2,5)	-	2,0 (1,0-3,0)	-
Grey cast iron with globular graphite	≤ 800 N/mm <sup>2</sup>	KT28/ HT50	200 (180-250)	1,0 (0,5-2,5)	-	2,0 (1,0-3,0)	-
Hardened steel	43-55 HRC	KT28	120 (60-200)	0,5 (0,3-1,5)	-	1,0 (0,5-2,0)	-

## Availability:

immediately

## Jongen Werkzeugtechnik GmbH &amp; Co. KG

Siemensring 11 · D-47877 Willich

Tel: +49 2154 / 9285-0 · Fax: +49 2154 / 911976

Free Fax: 00 800 / 56 64 36 33

www.jongen.de · email: info@jongen.de