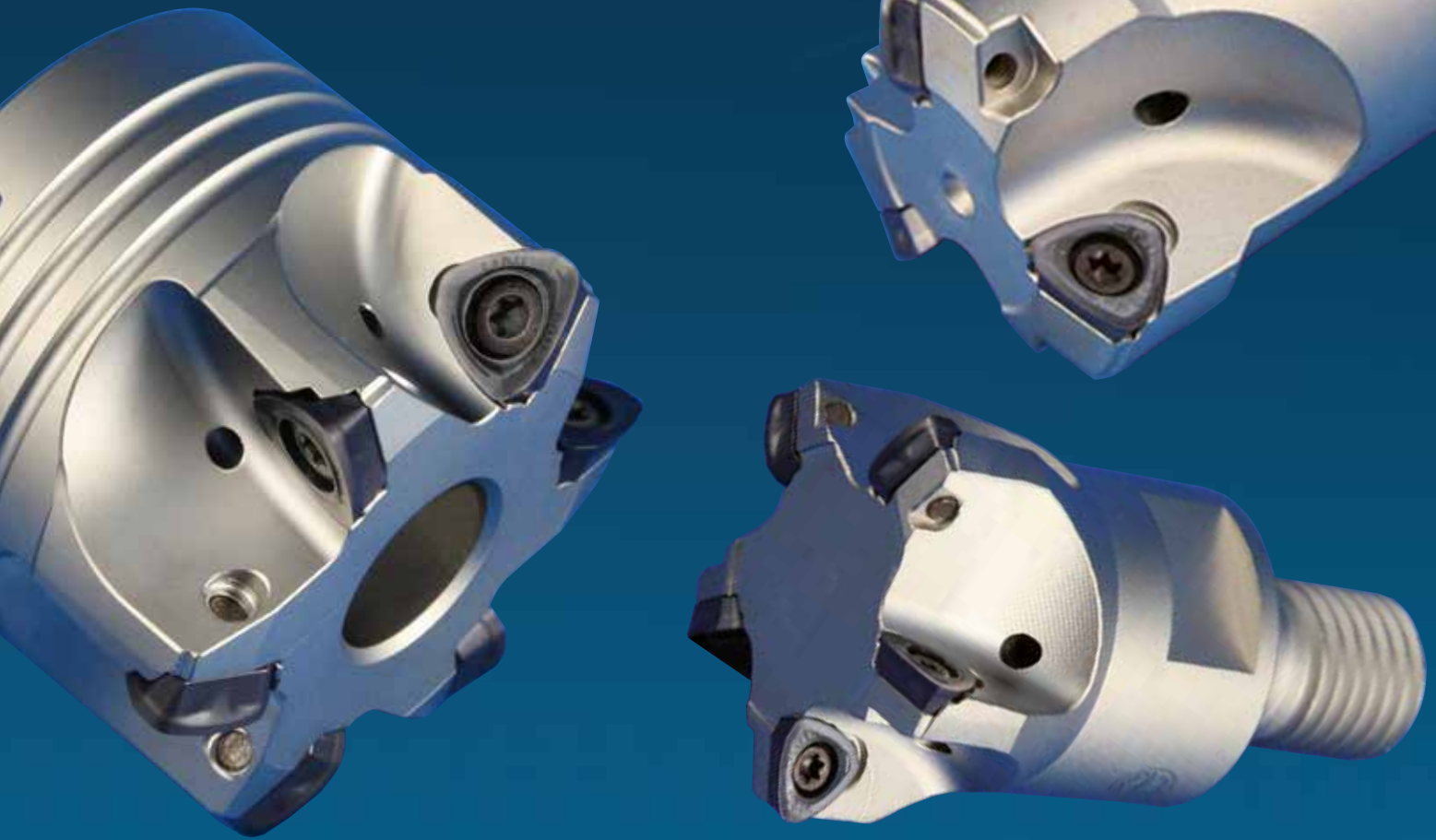


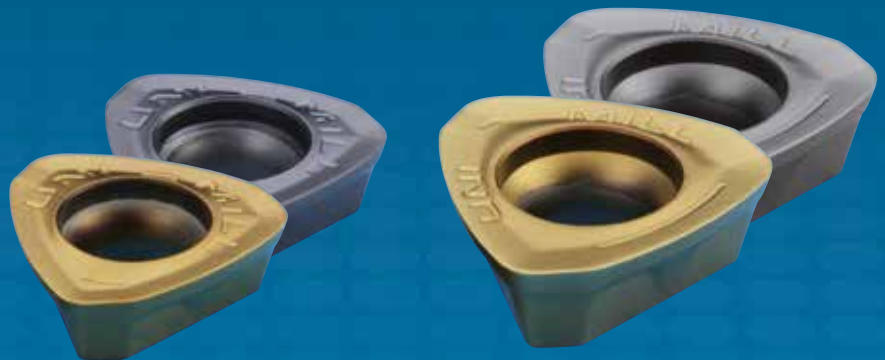


# POWERMILL

by Jongen



Jongen Werkzeugtechnik GmbH



Products from



Willich



North-Rhine  
Westphalia



Germany



Europe

for



Europe

and the

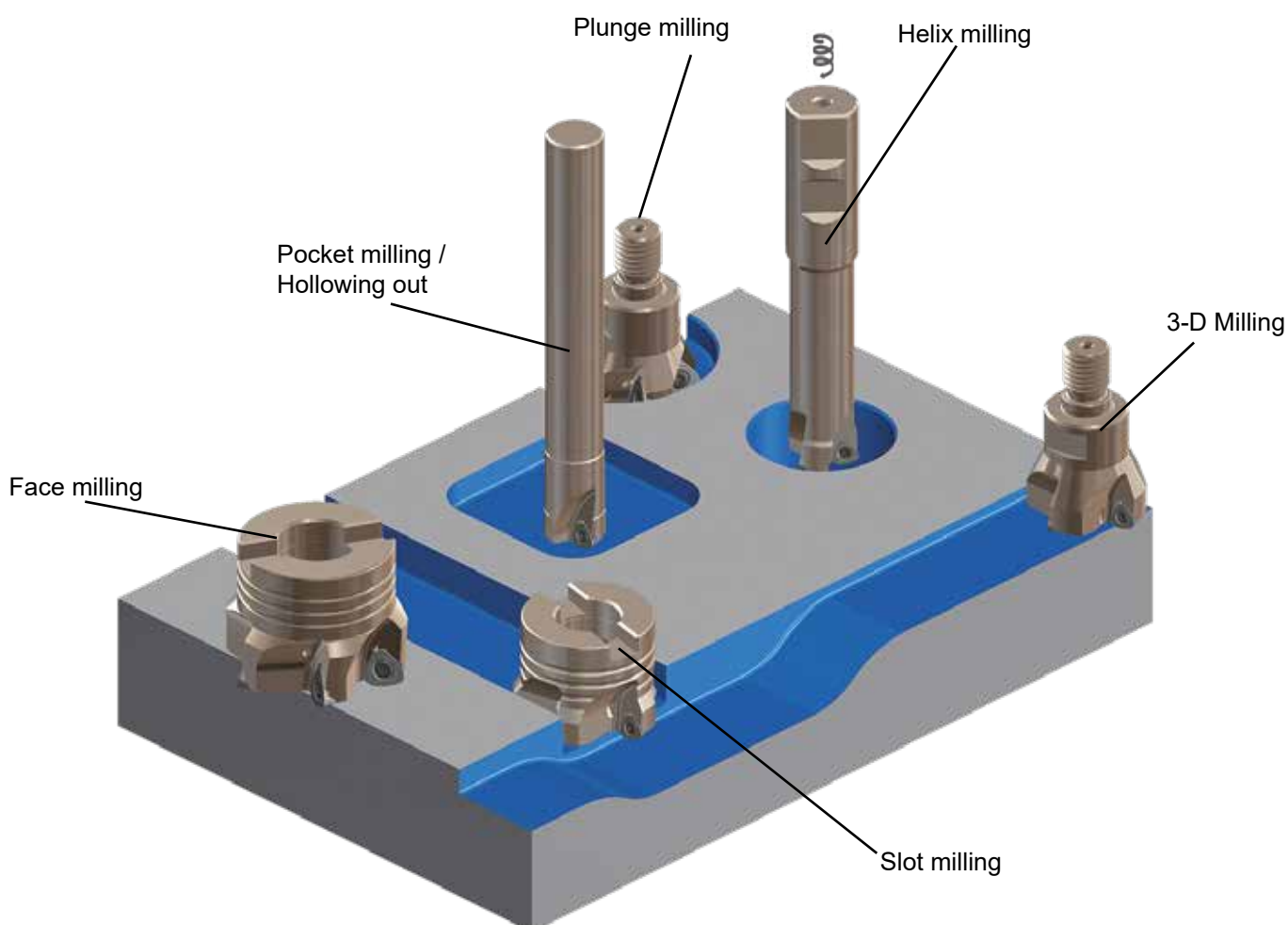


## Features:

- ☞ 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:

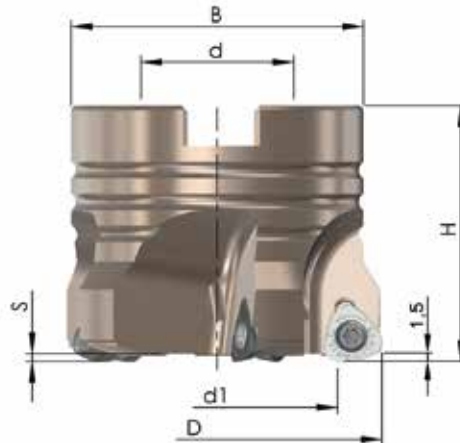
- ☞ High chip volume per minute for low working time
- ☞ Suitable for almost all materials
- ☞ Applicable for great reaches
- ☞ Contour roughing possible
- ☞ Extreme stable inserts
- ☞ Very hard tools
- ☞ Different tool types allow flexible applications areas: Shell milling cutters, screw-in cutters, 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 A11



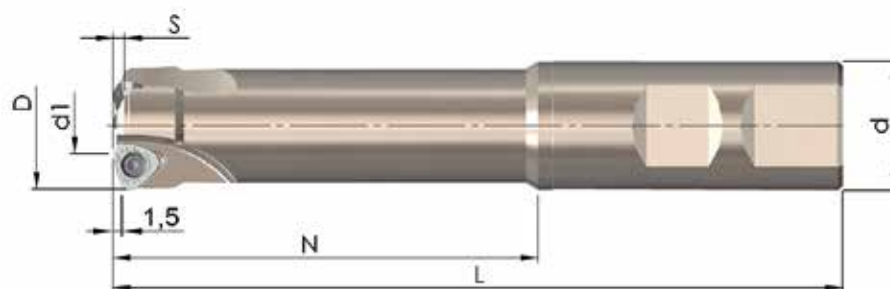
### Shell type mills



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
<b>Close pitch</b>								
00PP-050-540-5	50	36,4	40	22	46	1,0	5	MS-10x25-912
00PP-052-540-5	52	38,4	40	22	46	1,0	5	MS-10x25-912
00PP-063-540-7	63	49,3	50	27	54	1,0	7	MS-12x35-912
00PP-066-540-7	66	52,3	50	27	54	1,0	7	MS-12x35-912

MS = Central Screw

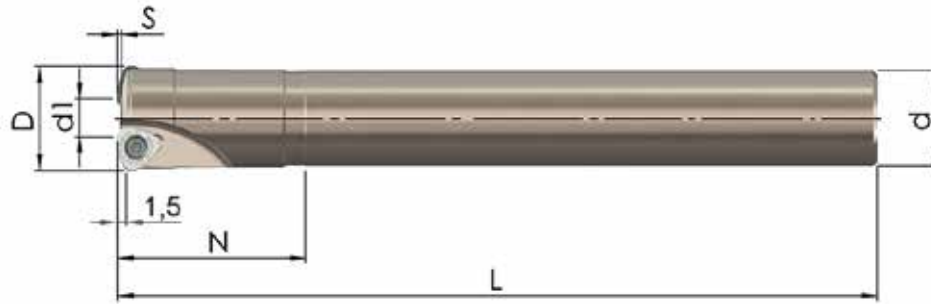
### Shank Milling Cutter DIN 1835-B (Weldon):



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

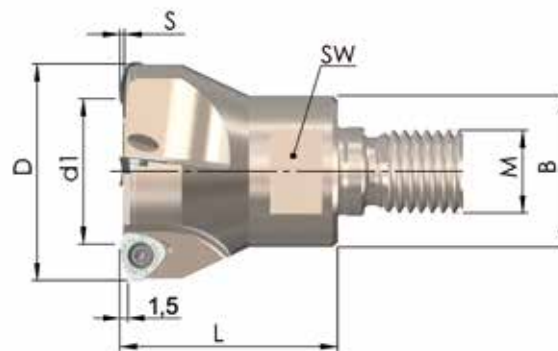
Order-No.	D	d <sub>1</sub>	L	d	N	S	Z
00PP-20-540-2-80	20	8,3	135,5	20	80	1,0	2
00PP-22-540-2-80	22	10,2	135,5	20	80	1,0	2
00PP-25-540-3-80	25	12,6	141,5	25	80	1,0	3
00PP-25-540-3-125	25	12,6	186,5	25	125	1,0	3
00PP-32-540-3-80	32	19,0	141,5	25	80	1,0	3
00PP-32-540-3-125	32	19,0	186,5	25	125	1,0	3
00PP-40-540-4-80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

## Shank Milling Cutter 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

## Srew-In cutters



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	29,0	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
<b>Close pitch</b>								
ESF-32-M16-540-4	32	19,0	42	M16	29,0	SW24	1,0	4
ESF-35-M16-540-4	35	21,4	42	M16	29,0	SW24	1,0	4
ESF-40-M16-540-5	40	26,4	42	M16	29,0	SW24	1,0	5
ESF-42-M16-540-5	42	28,4	42	M16	29,0	SW24	1,0	5

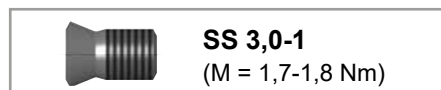
## Inserts:

			<b>HT45</b> (code 31)	<b>HT50</b> (code 22)	<b>HT30</b> (code 29)	<b>HT32</b> (code 33)	<b>XC35</b> (code 46)	<b>KT28</b> (code 23)	
	<b>JMA11-540-</b> IK 7,85 x 3,0	Order- No.		<b>A11A-CA22</b>			<b>A11A-EM46</b>	<b>A11A-DD23</b>	
		$f_z$ [mm]		0,70 (0,50-1,50)			0,70 (0,50-1,50)	0,70 (0,50-1,50)	
	<b>JMA11-541-</b> IK 7,85 x 3,0	Order- No.	<b>A11A-GJ31</b>			<b>A11A-FN33</b>			
		$f_z$ [mm]	0,70 (0,50-1,50)			0,70 (0,50-1,50)			
	<b>JMA11-640-</b> IK 7,85 x 3,0	Order- No.	<b>A11A-KP31</b>	<b>A11A-RT22</b>	<b>A11A-JL29</b>	<b>A11A-HN33</b>	<b>A11A-SE46</b>		
		$f_z$ [mm]	0,70 (0,50-1,50)	0,70 (0,50-1,50)	0,70 (0,50-1,50)	0,70 (0,50-1,50)	0,70 (0,50-1,50)		
			20	20	20	20	20	20	

Key to symbols see catalogue page XV-39

$V_c$ [m/min]	Steel	Stainless	Cast iron	Non-ferrous metals	Highly heat-resistant	Tempered
<b>HT45</b>	250 (200 - 350)	220 (140 - 300)	240 (130 - 280)			
<b>HT50</b>	220 (160 - 300)	200 (100 - 300)	260 (200 - 300)			
<b>HT32</b>	250 (200 - 350)	240 (140 - 300)			60 (40 - 200)	
<b>HT30</b>		240 (140 - 300)			60 (40 - 200)	
<b>KT28</b>			260 (180 - 350)			80 (40 - 120)
<b>XC35</b>	120 (60 - 160)	100 (60 - 180)			80 (60 - 120)	

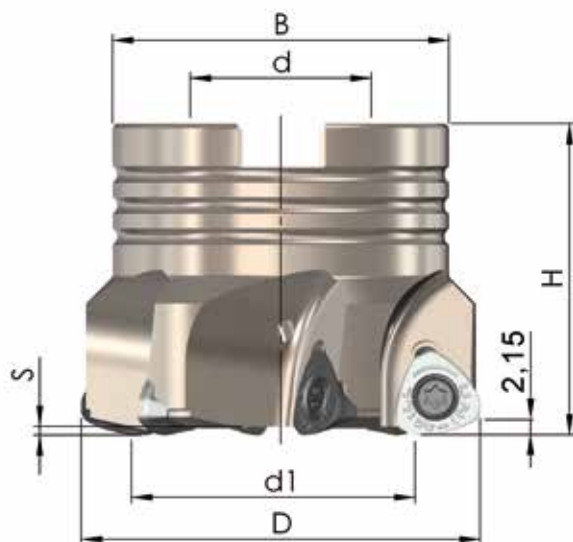
## Spare parts:



## PRODUCT GROUP A12



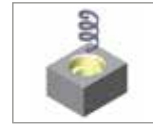
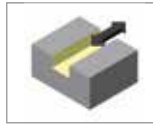
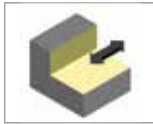
## Shell type mills



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
<b>close pitch:</b>								
00PP-052-545-5	52	31,6	40	22	46	1,35	5	MS-10x25-912
00PP-063-545-6	63	42,5	50	27	54	1,35	6	MS-10x30-912
00PP-066-545-6	66	45,5	50	27	54	1,35	6	MS-10x30-912
00PP-080-545-6	80	59,5	50	32	64	1,35	6	MS-16x30-912

MS = Central Screw

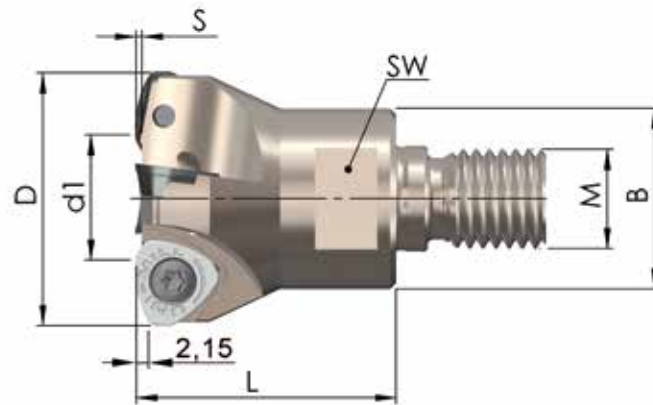
## PRODUCT GROUP A12



**HSC**













### Screw-In cutters



Order-No	D	d1	L	M	B	SW	S	Z
ESF-32-M16-545-3	32	15,0	40	M16	29	SW24	1,8	3
ESF-35-M16-545-3	35	16,0	40	M16	29	SW24	1,8	3
ESF-40-M16-545-4	40	20,8	42	M16	29	SW24	1,3	4
ESF-42-M16-545-4	42	22,5	42	M16	29	SW24	1,3	4


Inserts:

			<b>HT45</b> (code 31)	<b>HT50</b> (code 22)	<b>HT30</b> (code 29)	<b>HT32</b> (code 33)	<b>XC35</b> (code 46)	<b>KT28</b> (code 23)	
	<b>JMA12-545-</b> IK 12,0 x 5,0	Order- No.		<b>A12A-OB22</b>			<b>A12A-RD46</b>	<b>A12A-PC23</b>	
		$f_z$ [mm]		1,0 (0,50-2,50)			1,0 (0,50-2,00)	1,0 (0,50-2,50)	
	<b>JMA12-546-</b> IK 12,0 x 5,0	Order- No.	<b>A12A-TF31</b>			<b>A12A-SF33</b>			
		$f_z$ [mm]	1,0 (0,50-2,50)			1,0 (0,50-2,50)			
	<b>JMA12-645-</b> IK 12,0 x 5,0	Order- No.	<b>A12A-XJ31</b>	<b>A12A-ZJ22</b>	<b>A12A-UG29</b>	<b>A12A-WH33</b>	<b>A12A-BK46</b>		
		$f_z$ [mm]	1,0 (0,50-2,50)	1,0 (0,50-2,50)	1,0 (0,50-2,50)	1,0 (0,50-2,50)	1,0 (0,50-1,80)		
			20	20	20	20	20	20	

Key to symbols see catalogue page XV-39

$V_c$ [m/min]	Steel	Stainless	Cast iron	Non-ferrous metals	Highly heat-resistant	Tempered
<b>HT45</b>	250 (200 - 350)	220 (140 - 300)	240 (130 - 280)			
<b>HT50</b>	220 (160 - 300)	200 (100 - 300)	260 (200 - 300)			
<b>HT30</b>		240 (140 - 300)			60 (40 - 200)	
<b>HT32</b>	250 (200 - 350)	240 (140 - 300)			60 (40 - 200)	
<b>XC35</b>	120 (60 - 160)	100 (60 - 180)			80 (60 - 120)	
<b>KT28</b>			260 (180 - 350)			80 (40 - 120)

Spare parts:

 **SS 4,5-1**  
(M = 4,6-4,8 Nm)

 **T 20**

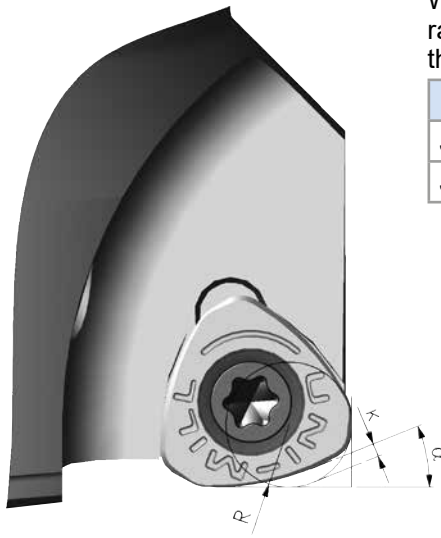
 **Fett**  
Grease, Graisse, Grasso



## 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	$\alpha$
JMA11-...	3	0,63	22,0°
JMA12-...	4	1,08	24,3°



K= free milling area

### Feed:

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

Max. feed increment see "b".

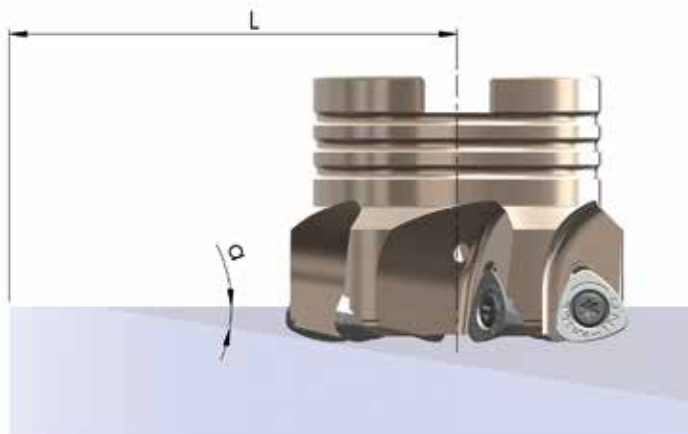
Insert	a	b	R
JMA11-...	1,50	2,5	1,3
JMA12-...	2,15	3,5	2,0



## Slot milling by ramping:

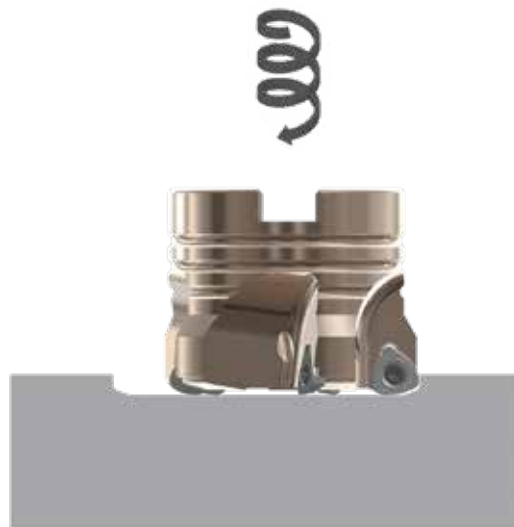
Angle of immersion  $\alpha$  max.:

Insert JMA11-... = 1,5°  
 Insert JMA12-... = 2,0°



D	Ramping angle max. $\alpha$ (°)	Processing path min. L (mm)	$a_p$ max	Insert width	Insert
20	4,3	20	1,50	7,85	JMA11-...
22	3,8	23	1,50	7,85	JMA11-...
25	3,1	27	1,50	7,85	JMA11-...
32	2,3	38	1,50	7,85	JMA11-...
35	2,0	42	1,50	7,85	JMA11-...
40	1,7	50	1,50	7,85	JMA11-...
42	1,6	53	1,50	7,85	JMA11-...
50	1,3	65	1,50	7,85	JMA11-...
52	1,3	68	1,50	7,85	JMA11-...
63	1,0	84	1,50	7,85	JMA11-...
66	1,0	89	1,50	7,85	JMA11-...
32	4,6	20	2,15	12,00	JMA12-...
35	4,0	23	2,15	12,00	JMA12-...
40	2,2	28	2,15	12,00	JMA12-...
42	2,1	30	2,15	12,00	JMA12-...
50	1,1	57	2,15	12,00	JMA12-...
52	1,6	40	2,15	12,00	JMA12-...
63	1,2	51	2,15	12,00	JMA12-...
66	1,2	54	2,15	12,00	JMA12-...
80	0,9	68	2,15	12,00	JMA12-...
100	0,7	88	2,15	12,00	JMA12-...
125	0,6	113	2,15	12,00	JMA12-...
160	0,4	148	2,15	12,00	JMA12-...

## 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 9.

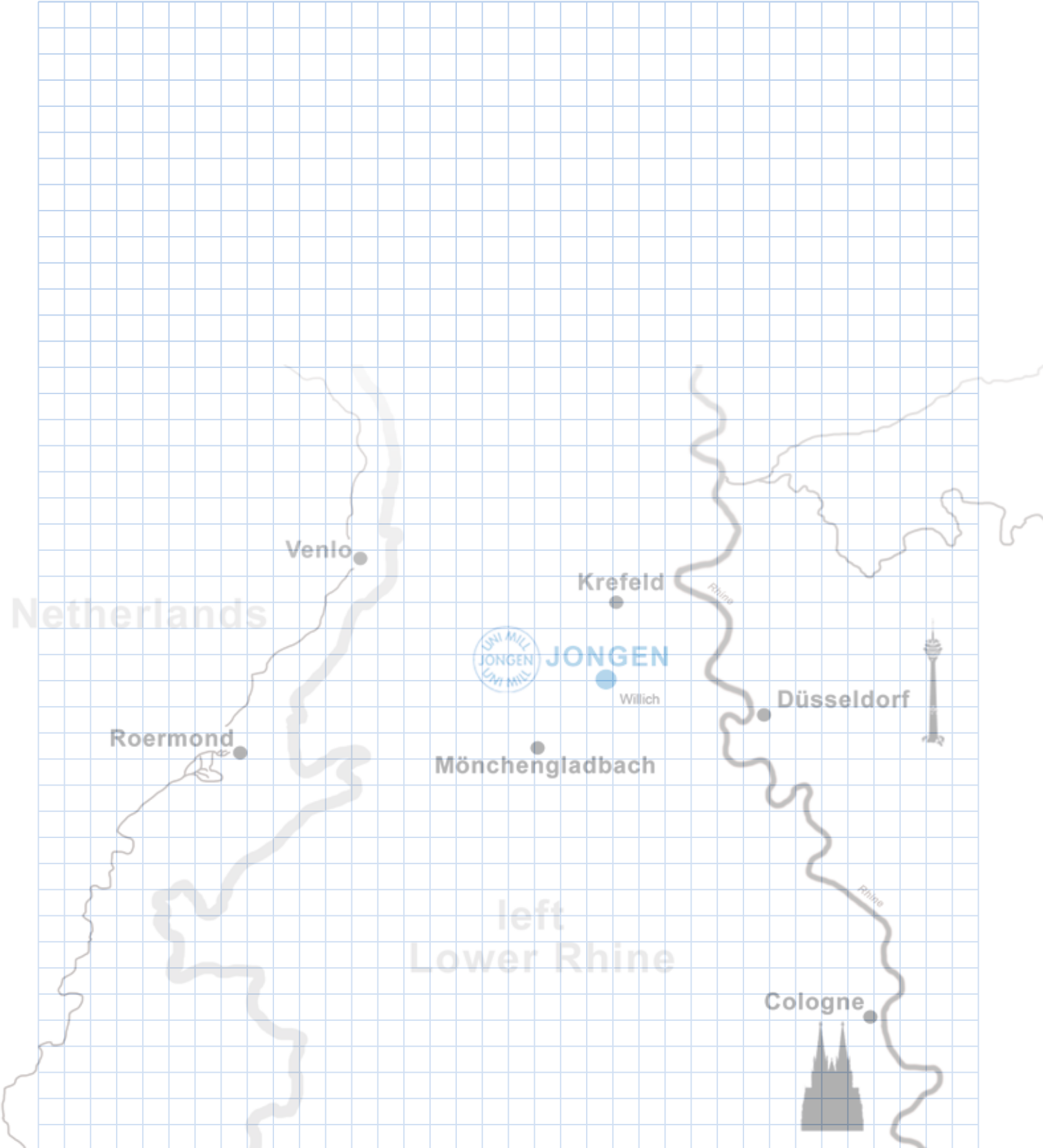
## Type A11

Type A11 Ø Tool	Ø D1 min	Ø D1 max. (node formation)
20	27	40
22	27	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

## Type A12

Type A12 Ø Tool	Ø D1 min	Ø D1 max. (node formation)
32	-	-
35	-	-
40	-	-
42	-	-
50	82	100
52	86	104
63	108	126
66	114	132
80	142	160
100	182	200
125	232	250
160	302	320

Notes:



01/21

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Errors and omissions excepted!