Jongen Werkzeugtechnik

UNI MILL® JONGEN UNI MILL

FACE MILLING TYPE A20

Products from Willich → North-Rhine Westphalia → Germany → Europe for Europe and the

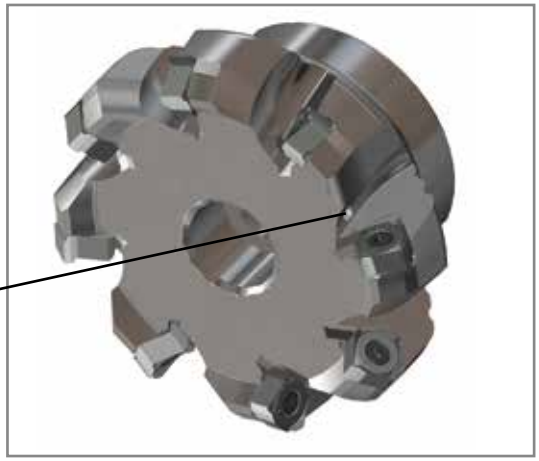
THE TOOL

- ☞ Especially efficient face milling cutter for the roughing and finishing machining
- ☞ Axial depth of cut max. 3,5mm, with 8 effective cutting edges
- ☞ Tools are made of tempered and solid tool steel in order to resist highest charges
- ☞ Thanks to the nickel-coated surfaces of the tools, a higher resistance can be obtained against reweldings and corrosion

CHARACTERISTICS

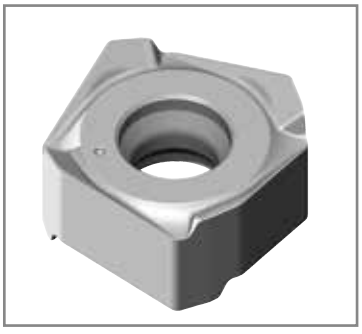
- ☞ Face milling, roughing and finishing tool for processing steel, stainless steel and cast iron.
- ☞ Special features of this new face milling generation are the high number of teeth and the soft cutting manner, thanks to the effectively positive rake angle.
- ☞ Highest productivity on small and middle sized machines.
- ☞ Different versions of number of teeth allow an optimal choice for the required machining process.

☞ All face mills include internal coolant passages

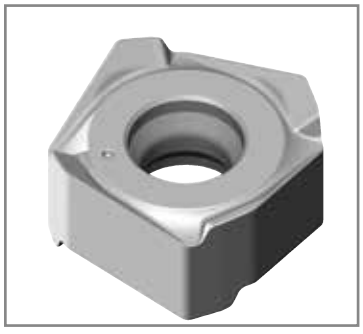


THE INSERT

☞ 8 effective cutting edges, highly positive chip breaker, axial depth of cut max. 3,5mm



JMA20-534
precision *sintered*



JMA20-834
precision *ground*

wiper insert

JMA20-834B
precision *ground*

☞ Application areas: All kind of steels, high-grade steels and cast iron materials

Following carbide qualities are offered:

HC45

Code 41 - DIN-ISO 513 Classification P30-P35, M25-M30, K20-K30
Very tough fine grain quality with a thick HIPIMS-coating for middle - high cutting speeds and high feed rates. This quality is suitable for dry milling and can also be adopted with cooling. Application areas are roughing and finishing of almost all steels such as structural steel, tool steel, heat-treatable steel as well as unalloyed, low alloyed and high alloyed steel, and also cast-qualities such as grey cast iron, globular graphite cast iron etc.

HC30

Code 52 - DIN-ISO 513 Classification P20-P30, M25-M30, S20-S30
Hard wearing and tough finest grain carbide with HIPIMS-coating for middle cutting speeds and middle feed rates. This quality is suitable for dry milling and can also be adopted with cooling. Application areas are roughing and finishing high grade steel as well as high alloyed materials.

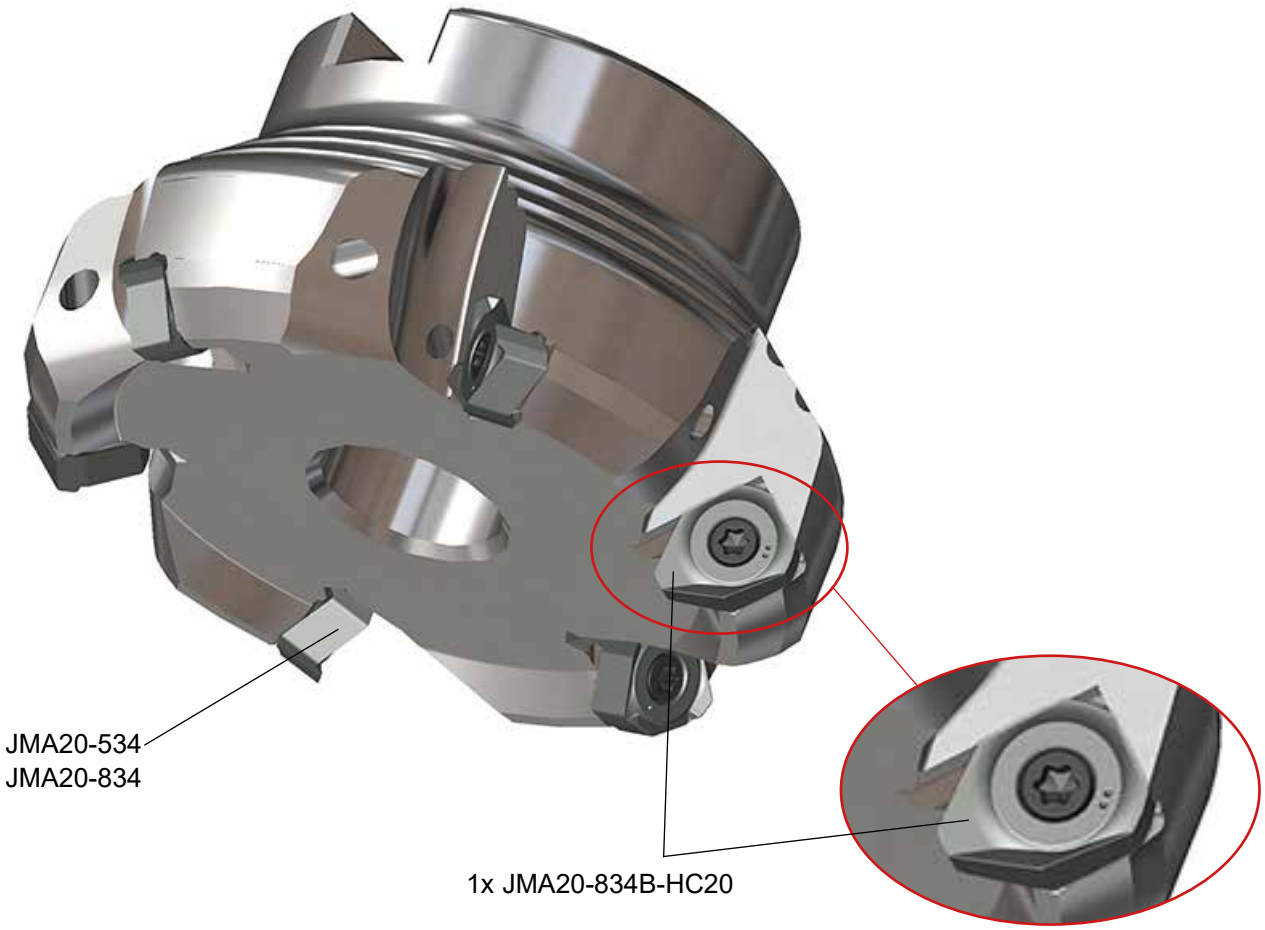
XC35

Code 46 - DIN-ISO 513 Classification P20-P30, M20-M30, S15-S25
Wear resistant and tough finest grain hard metal quality with HIPIMS-coating. On the basis of the experience gained wet machining is preferably to be adopted with this quality; however the dry processing is also possible. XC35 has been especially developed for processing stainless steel, duplex steel and high-alloyed materials, but also for titanium etc.

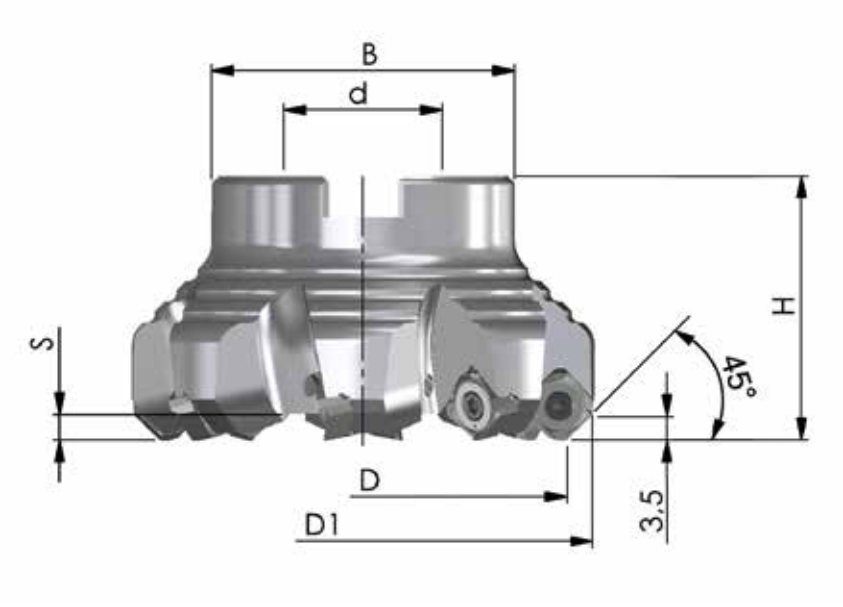
HC20

Code 53 , DIN-ISO 513 Classification K15-K20, H15-H20
Very hard wearing fine grain carbide with HIPIMS-coating for middle – high cutting speeds with high feed rates. This quality is suitable for dry milling and can also be adopted with cooling. Application areas are roughing and finishing of cast iron materials, e.g. grey-, tempered-, vermicular-, graphite- and globular graphite cast iron.

ASSEMBLY INSTRUCTION WIPER INSERT

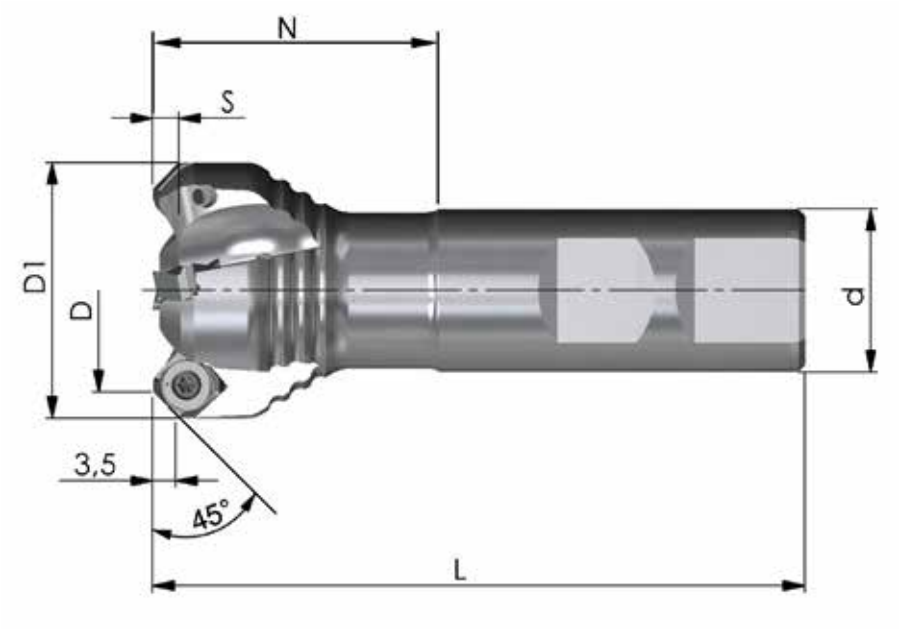


TECHNICAL DATA

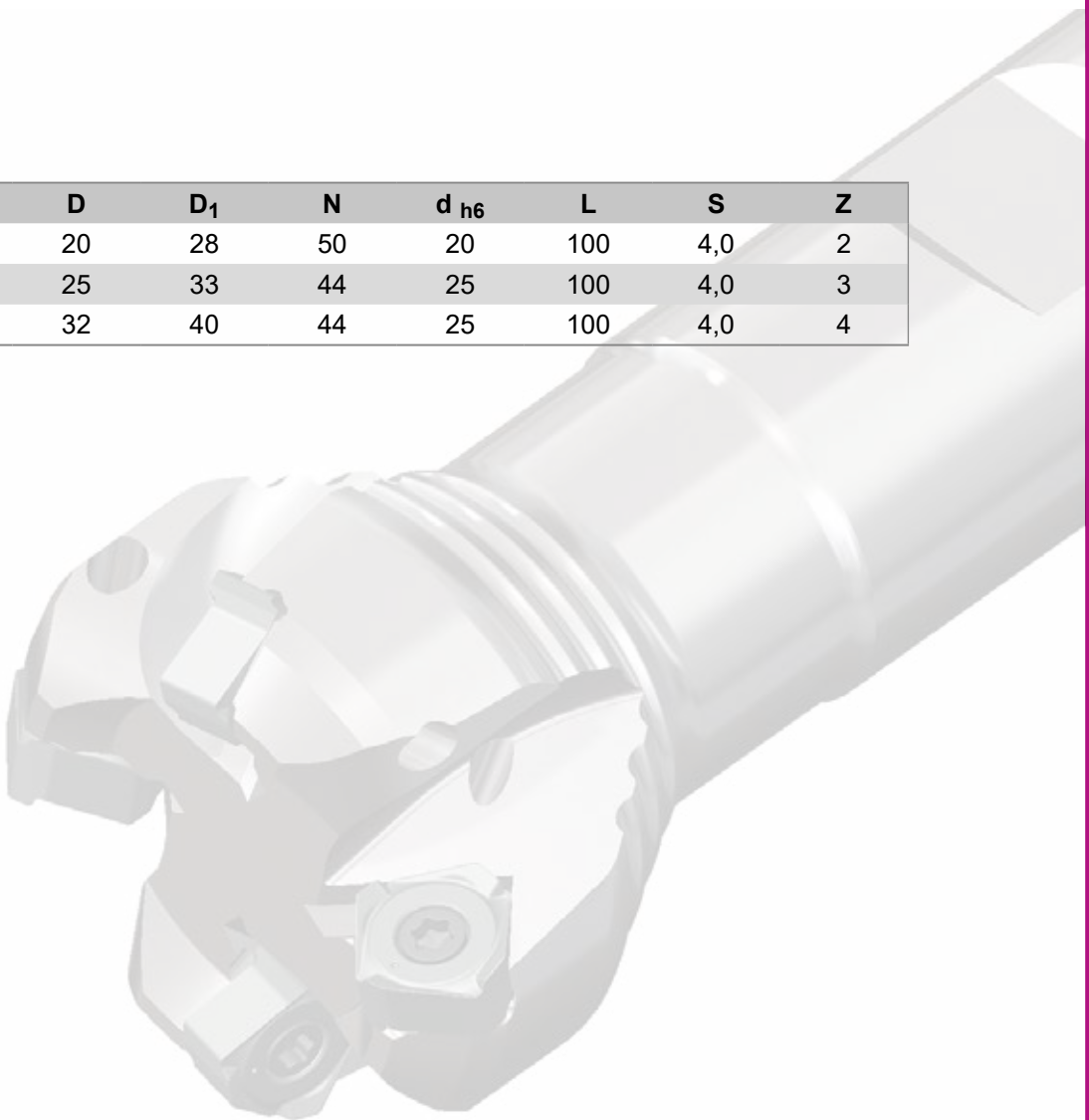


Order-Nr.	D	D_1	H	d	B	S	Z	MS
45PP-040-A20-5	40	48	40	16	38	4,0	5	MS-8x25-912
45PP-050-A20-5	50	58	40	22	46	4,0	5	MS-10x25-912
45PP-063-A20-6	63	71	40	22	46	4,0	6	MS-10x25-912
45PP-080-A20-7	80	88	50	27	58	4,0	7	MS-12x30-912
45PP-100-A20-9	100	108	50	32	78	4,0	9	MS-16x30-912
45PP-125-A20-10	125	133	63	40	90	4,0	10	MS-20x55-7991
Close teeth pitch								
45PP-040-A20-6	40	48	40	16	38	4,0	6	MS-8x25-912
45PP-050-A20-7	50	58	40	22	46	4,0	7	MS-10x25-912
45PP-063-A20-8	63	71	40	22	46	4,0	8	MS-10x25-912
45PP-080-A20-9	80	88	50	27	58	4,0	9	MS-12x30-912
45PP-100-A20-11	100	108	50	32	78	4,0	11	MS-16x30-912
45PP-125-A20-12	125	133	63	40	90	4,0	12	MS-20x55-7991

TECHNICAL DATA



Order-Nr.	D	D_1	N	d_{h6}	L	S	Z
45PP-20-20-A20-2	20	28	50	20	100	4,0	2
45PP-25-25-A20-3	25	33	44	25	100	4,0	3
45PP-32-25-A20-4	32	40	44	25	100	4,0	4



INSERTS

			HC45 (code 41)	HC30 (code 52)	XC35 (code 46)	HC20 (code 53)		
	**JMA20-534-** IK 9,0 x 4,48 R0,6 H M	Order-No.	**A20A-WD41**	**A20A-UC52**		**A20A-TB53**		
		f_z [mm]	0,20 (0,10-0,30)	0,20 (0,10-0,30)		0,30 (0,10-0,50)		
	**JMA20-834-** IK 9,0 x 4,48 R0,6 M S	Order-No.	**A20B-YD41**		**A20B-AE46**	**A20B-XC53**		
		f_z [mm]	0,20 (0,10-0,30)		0,20 (0,10-0,30)	0,30 (0,10-0,50)		
								
	**JMA20-834B-** IK 9,0 x 4,48 R0,6 U	Order-No.				**A20B-BF53**		
		f_n [mm/U]				2,00 (1,00-3,00)		

Key to symbols see catalogue page XV-39

V_c [m/min]	steel	stainless	cast iron	non-ferrous metals	highly heat-resistant	tempered
HC45	250 (200 - 350)	240 (140 - 300)	240 (130 - 280)			
HC30	160 (120 - 220)	200 (100 - 300)			60 (40 - 200)	
XC35	160 (120 - 220)	200 (100 - 300)			60 (40 - 200)	
HC20			260 (180 - 350)			80 (40 - 120)

SPARE PARTS

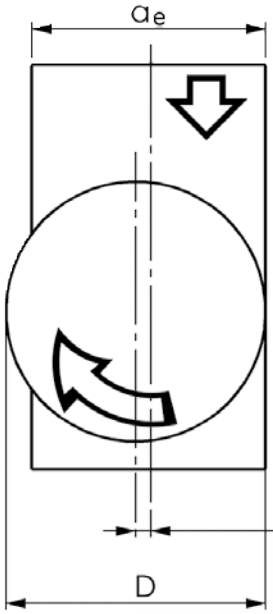
SS 3,0-2
(M = 2,3-2,5 Nm)

T 09

100g

ELECTION OF THE OPTIMAL TOOL

Optimal choice of tool diameter:



eccentric position
(synchronous milling)

a_e = radial depth of cut
D = tool diameter

Calculation example:

a_e = 50 mm
D = 50 x 1,2 = 60
→ Here the correct tool diam. would be 63 mm.

Optimal choice of a tool type:

Regular pitch:
universal milling and application

Close pitch:
maximal number of teeth for high capacity under steady conditions

FURTHER TECHNICAL INFORMATION

Calculation of rotation number of main spindle:

$$n = \frac{1000 \cdot v_c}{D \cdot \pi} \quad [min^{-1}]$$

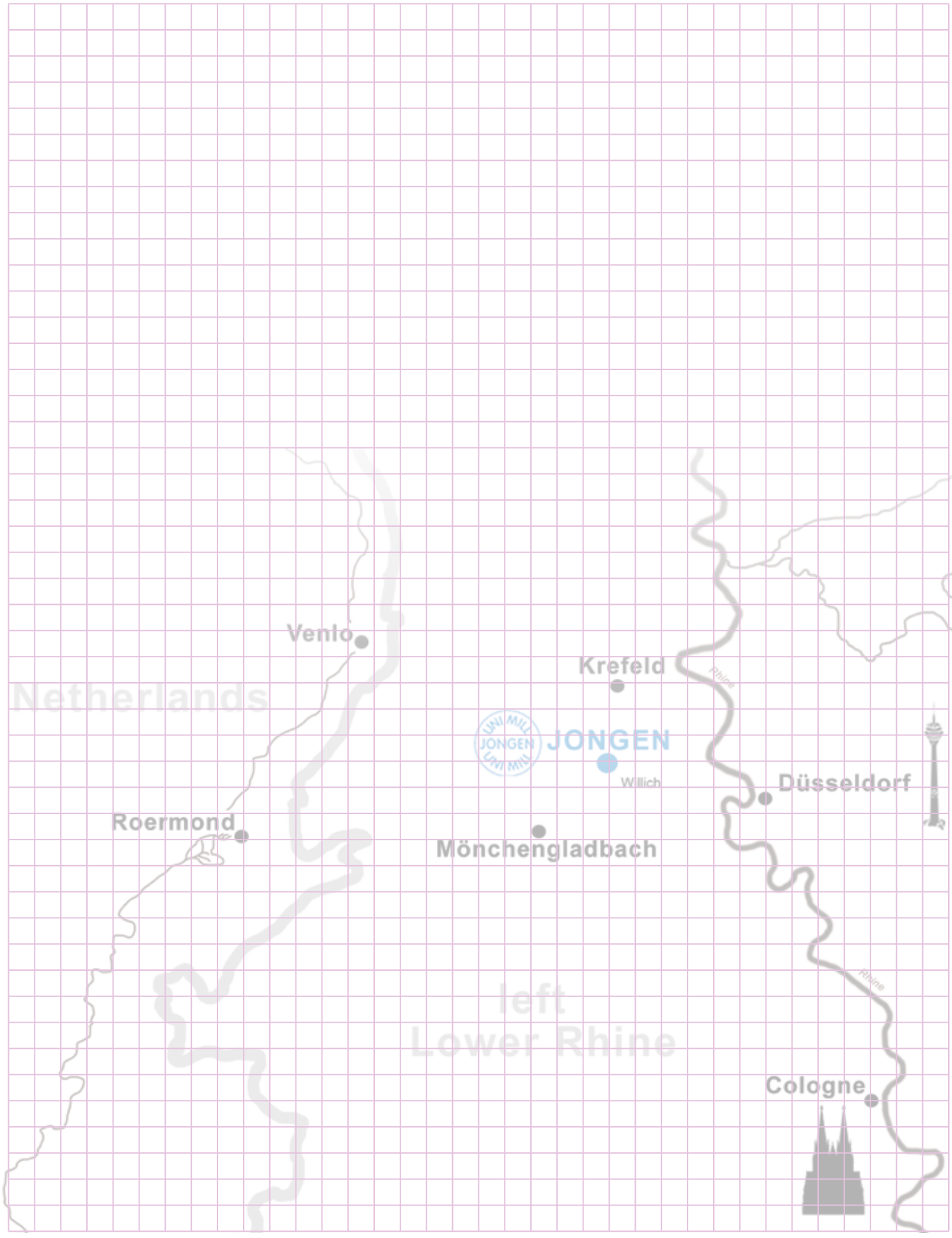
n = Rotation number (min^{-1})
V_c = Cutting speed (m/min)
D = Diameter of a tool (mm)

Calculation of feed velocity:

$v_f = f_z \cdot Z \cdot n$ [mm/min]

V_f = Total feed (mm/min)
f_z = Feed rate per tooth (mm)
Z = Number of teeth
n = Rotation number (min^{-1})

NOTES



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