JONGEN
Werkzeugtechnik

Face Milling

Type A15

UNI MILL® JONGEN UNI MILL

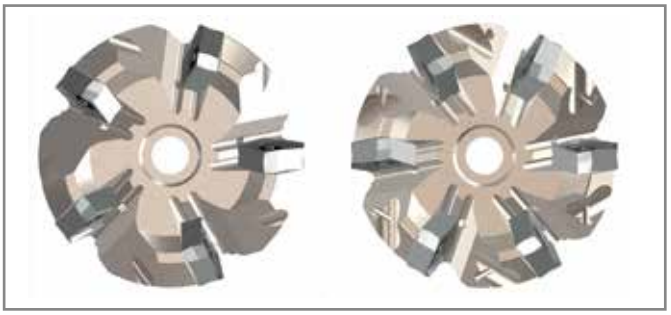
Products from Willich → North Rhine-Westphalia → Germany → Europe for Europe and the

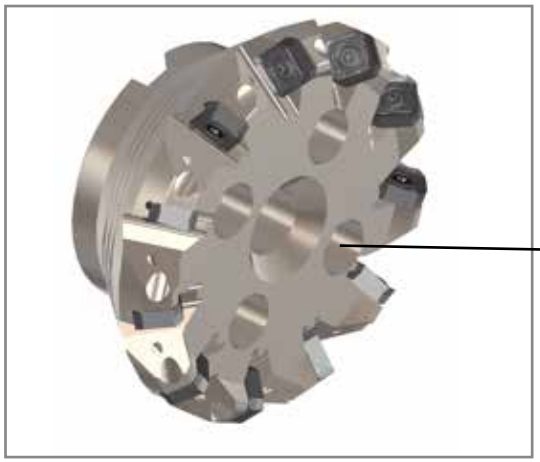
THE TOOL

- ☞ Especially efficient face milling cutter for the roughing and finishing machining
- ☞ Axial depth of cut max. 7 mm, 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 tool designed for steel and cast iron processing
- ☞ The new generation of face mills has persuasive properties such as the number of cutting edges and soft cutting manner, caused by the positive rake angle and the good surface.
- ☞ Due to the positive geometry the tools are applicable at almost every kind of machine.
- ☞ Different versions of number of teeth allow an optimal choice for the required machining process.

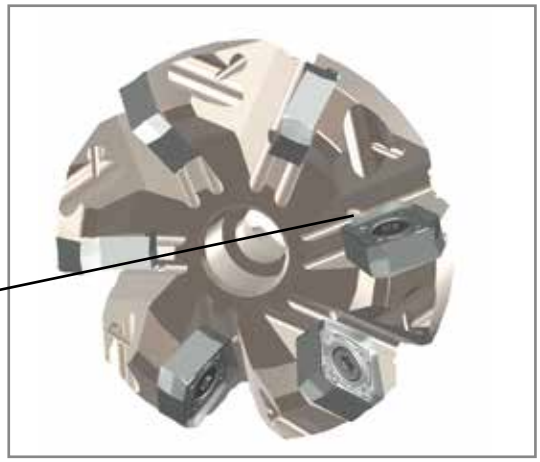




- ☞ Holders are made to DIN 8030. Starting from ø125 the tools are equipped with supplementary boreholes for the corresponding tool holder.

supplementary boreholes from ø125

- ☞ Face mills from Ø 50 – 100 include internal coolant passages



internal coolant passage

THE INSERT

☞ Precision sintered, with 8 effective cutting edges

axial depth of cut max. 7 mm

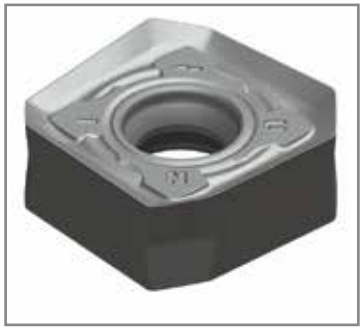
JMA15-554

Precision sintered with highly positive chip breaker, chamfered and rounded edge.

JMA15-754

Precision sintered with highly positive chip breaker, chamfered and rounded edge, as alternative to the FP 554

JMA15-454



Precision sintered, with chip breaker, chamfered and rounded edge.
Qualified for robust machining, but needs more drive power.

☞ Application areas: all kind of steels and high-grade steels, hard-to-machine materials as well as cast iron materials.

Following carbide qualities are offered:

HT32

Code 33, DIN-ISO 513 Classification P20-P30, M25-M30, S20-S30

Hard wearing and tough finest grain carbide with an AlTiN- Nanocomposit-coating for medium to high cutting speeds and middle feed rates. This quality is equally applicable for dry as well as wet milling. It is especially suited for processing stainless steel, tool steel as well as high alloyed steel.

HT45

Code 31, DIN-ISO 513 Classification P30-P35, M25-M30, K20-K30,

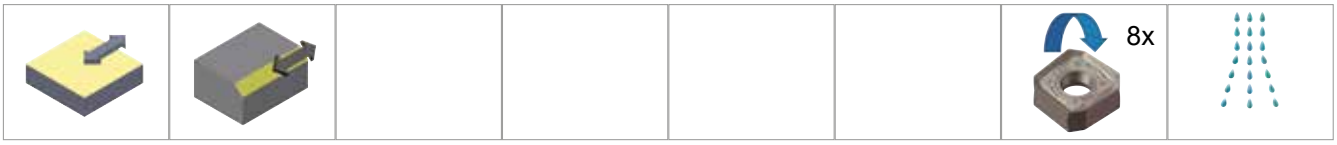
Very tough fine grain carbide with an AlTiN- Nanocomposit-coating for middle to high cutting speeds with high feed rates. This quality is suitable for dry milling and can also be adopted with cooling. Application areas are roughing and finishing of almost all steels and cast iron qualities such as: structural steel, tool steel, heattreatable steel as well as unalloyed steel, low alloyed steel, high alloyed steel and also grey cast iron, globular graphite cast iron etc.

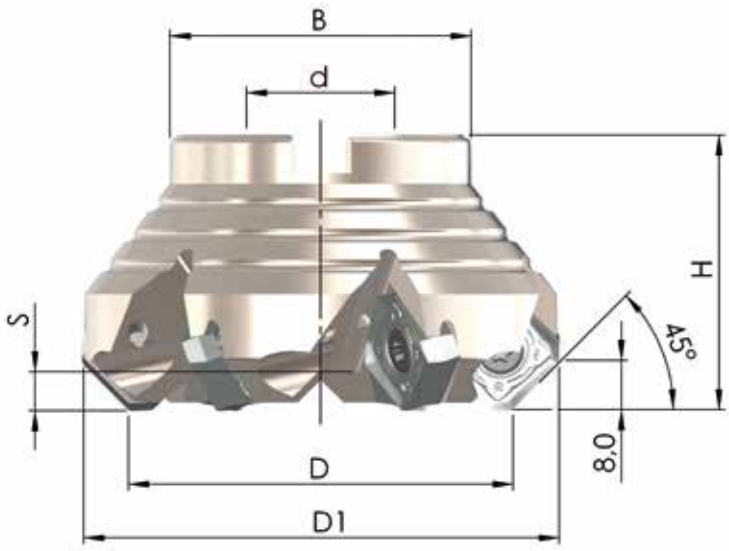
HT20

Code 32, DIN-ISO 513 Classification K15-K20, H15-H20

Very hard wearing fine grain carbide with an AlTiN- Nanocomposit-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.

TECHNICAL DATA





Order-Nr.	D	D_1	H	d	B	S	Z	MS
45PP-050-554-4	50	64,2	45	22	46	6,3	4	MS 10x25-912
45PP-063-554-5	63	77,2	45	22	46	6,3	5	MS 10x25-912
45PP-080-554-6	80	94,2	55	27	58	6,3	6	MS 12x35-912
45PP-100-554-7	100	114,2	55	32	78	6,3	7	MS 16x35-6912
45PP-125-554-9	125	139,2	63	40	90	6,3	9	MS 20x55-7991
45PP-160-554-11	160	174,2	63	40	90	6,3	11	MS 20x55-7991
Close pitch								
45PP-050-554-5	50	64,2	45	22	46	6,3	5	MS 10x25-912
45PP-063-554-6	63	77,2	45	22	46	6,3	6	MS 10x25-912
45PP-080-554-7	80	94,2	55	27	58	6,3	7	MS 12x35-912
45PP-100-554-9	100	114,2	55	32	78	6,3	9	MS 16x35-6912
45PP-125-554-11	125	139,2	63	40	90	6,3	11	MS 20x55-7991
45PP-160-554-13	160	174,2	63	40	90	6,3	13	MS 20x55-7991

MS= Central screw

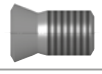
INSERTS

			HT45 (code 31)	HT32 (code 33)	HT20 (code 32)				
	**JMA15-454-** IK 16,2 x 7,1 H	Order-No.	**A15A-FC31**	**A15A-EB33**	**A15A-DA32**				
		f_z [mm]	0,30 (0,20-0,50)	0,30 (0,20-0,50)	0,40 (0,20-0,60)				
	**JMA15-554-** IK 16,2 x 7,1 M S	Order-No.	**A15A-HE31**	**A15A-GD33**	**A15A-MJ32**				
		f_z [mm]	0,20 (0,15-0,30)	0,20 (0,15-0,30)	0,30 (0,15-0,50)				
	**JMA15-754-** IK 16,2 x 7,1 M S	Order-No.	**A15A-LH31**	**A15A-KG33**	**A15A-JF32**				
		f_z [mm]	0,20 (0,15-0,30)	0,20 (0,15-0,30)	0,30 (0,15-0,50)				
			10	10	10				

Key to symbols see catalogue page XV-39

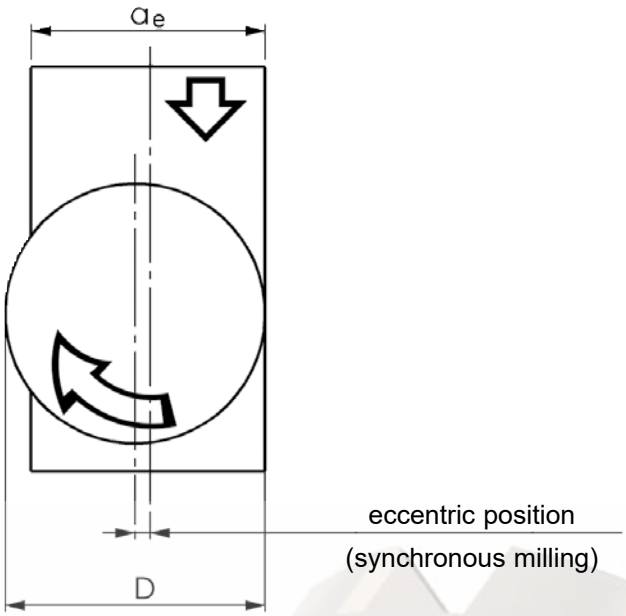
V_c [m/min]	steel	stainless	cast iron	non-ferrous metals	highly heat-resistant	tempered
HT45	250 (200 - 350)	240 (140 - 300)	240 (130 - 280)			
HT32	250 (200 - 350)	240 (140 - 300)			60 (40 - 200)	
HT20			260 (180 - 350)			80 (40 - 120)

SPARE PARTS

	**SS 5,0-4**	Tightening torque **4,8-5,0 Nm**	**Fixing screw**
	**T 20**		**Screw driver**
	**100 g**		**Heavy duty grease**

ELECTION OF THE OPTIMAL TOOL

Optimal choice of tool diameter:



Calculation example:

a_e = 50 mm

D = 50 x 1,2 = 60

→ Here the correct tool diam. would be 63 mm.

a_e = radial depth of cut
D = tool diameter

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:

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

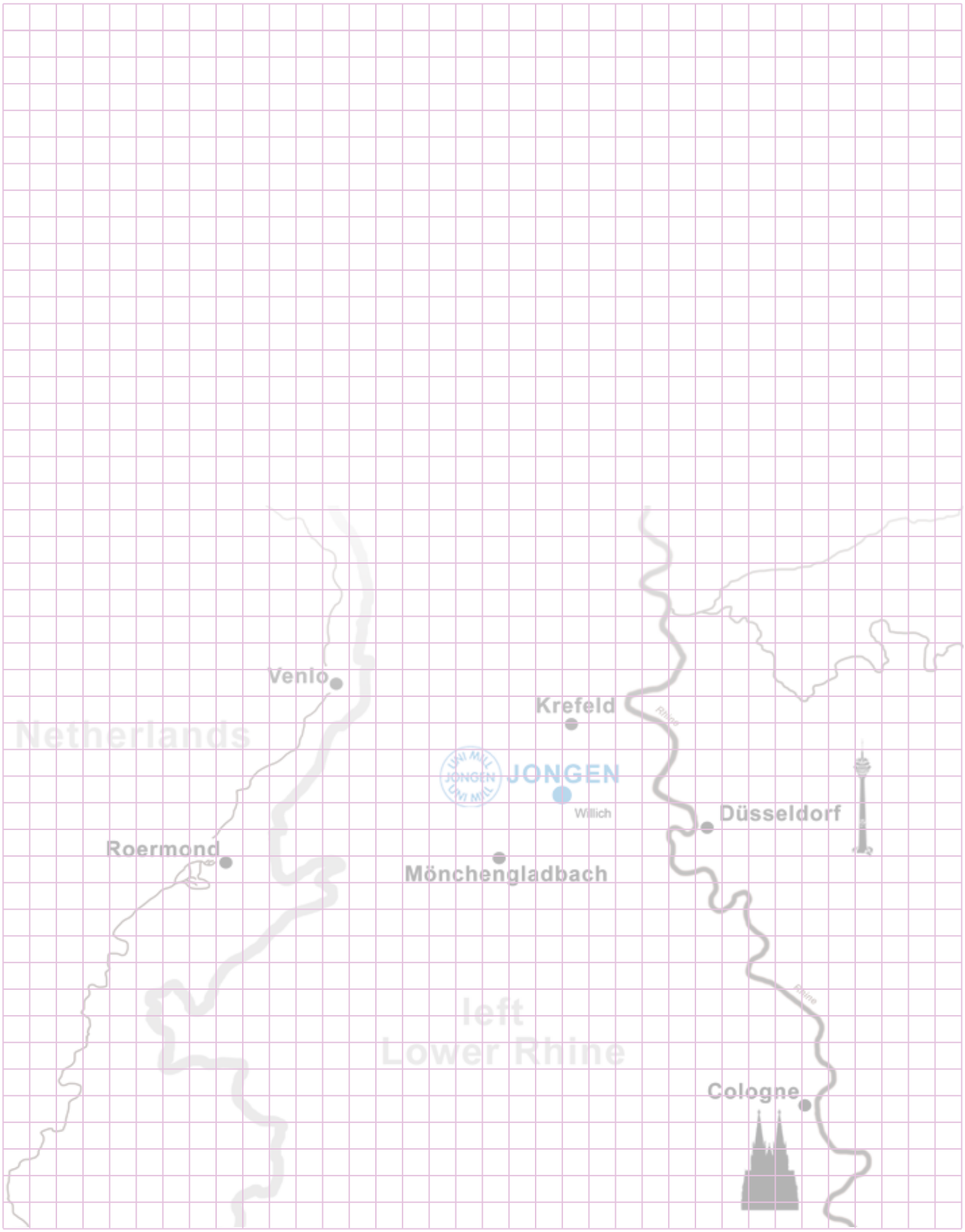
n = *Rotation number (min^{-1})*
V_c = *Cutting speed (m/min)*
D = *Diameter of a tool (mm)*

Calculation of feed velocity:

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

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

NOTES



E & OE

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