



Jongen Werkzeugtechnik



# Long Life



A revolution for longer tool life and for smooth milling

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## VHM 476W TS35

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Products from



Willich



North-Rhine Westphalia



Germany



Europe

for



Europe

and the



## The Tool

- Flat shaped shank type cutter, similar to DIN 6527
- Coupling made to DIN 6535-HB (Weldon)
- Optimized macro geometry
- Optimized micro geometry
- Front surface cutting geometry allows plunge milling
- Reduced shank

## The hard metal

- New development of hard metal, finest grain carbide for high efficiency milling operations, in the field of ISO K20-K30
- Higher tenacity and higher wearing quality

## The coating

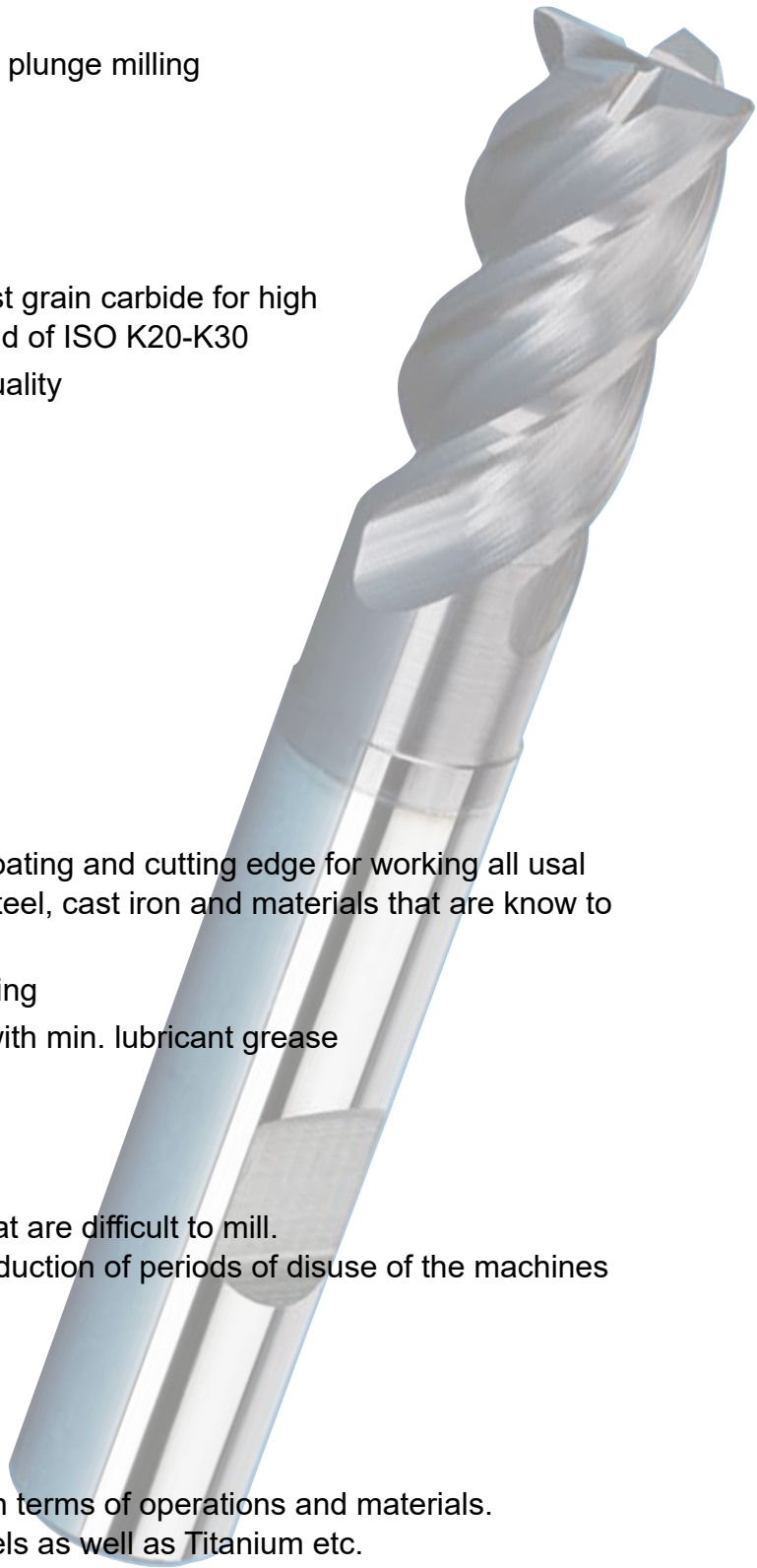
- New developed TiAlN coating
- Finest layer structure
- High oxidation stability
- High tenacity and high hardness

## The quality "TS35"

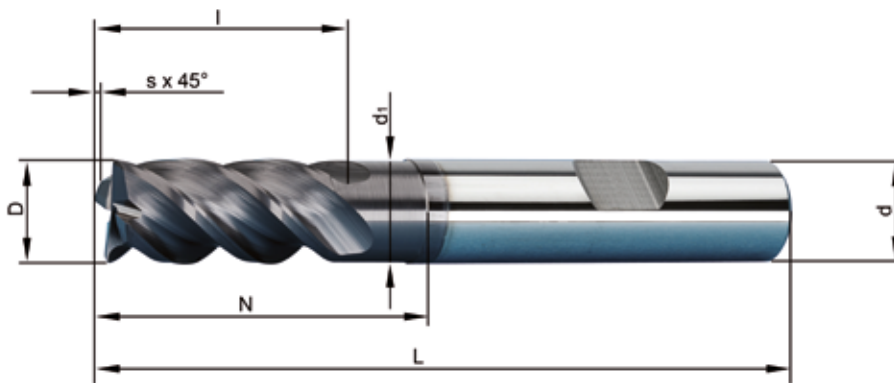
- Optimal combination of hard metal, coating and cutting edge for working all usual materials, such as steel, high grade steel, cast iron and materials that are known to be difficult to work with
- Suitable for roughing as well as finishing
- For dry milling, wet milling or milling with min. lubricant grease

## Advantages

- High feed rates also with materials that are difficult to mill.
- Very long tool life and as a result a reduction of periods of disuse of the machines
- Very good surface finish
- Smooth running of machine
- Secure mode of working procedure
- Full slot milling up to 1 x diam. possible
- Reduced shank for more axial infeed
- Great variety of range of application in terms of operations and materials.
- Especially suitable for high grade steels as well as Titanium etc.



## Technical data

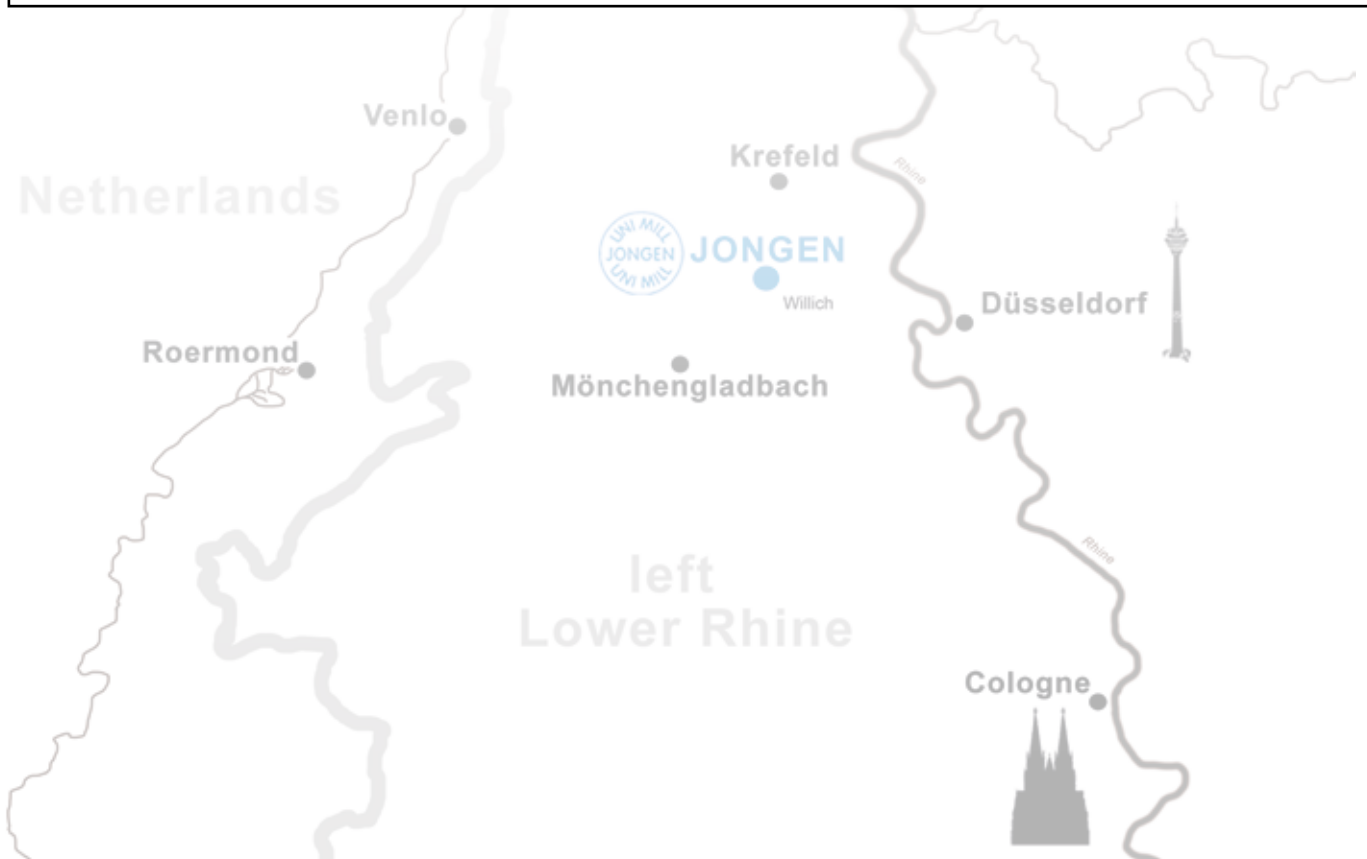


Tolerance  $\varnothing$ :

$\varnothing 4,0 - 20,0 =$  -0,02  
-0,04



Order-No.	D	sx45°	l	N	d <sub>1</sub>	d	L	Z
VHM 476W-04 TS35	4	0,10x45°	8	8	-	6	58	4
VHM 476W-05 TS35	5	0,15x45°	10	10	-	6	58	4
VHM 476W-06 TS35	6	0,20x45°	12	19	5,7	6	58	4
VHM 476W-08 TS35	8	0,25x45°	16	26	7,7	8	64	4
VHM 476W-10 TS35	10	0,30x45°	20	30	9,6	10	73	4
VHM 476W-12 TS35	12	0,40x45°	25	36	11,6	12	84	4
VHM 476W-16 TS35	16	0,50x45°	33	47	15,5	16	93	4
VHM 476W-20 TS35	20	0,50x45°	42	54	19,5	20	104	4



## Cutting Data Recommendations

Material	Treatment/ Alloy	V <sub>c</sub> (m/min)	Feed rate per tooth (f <sub>z</sub> ) in mm			
			ø 4-5 mm	ø 6,8 mm	ø 10-12 mm	ø 16-20 mm
Unalloyed steel / Structural steel	annealed 0,15 - 0,45% C HB 125 - 250	150 (140-180)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,14)	0,1 (0,08-0,15)
Low alloy steel	annealed tempered HB 180 - 350	150 (140-180)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,14)	0,1 (0,08-0,15)
High alloy steel / Tool steel	annealed tempered HB 180 - 330	120 (80-130)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,14)	0,1 (0,08-0,15)
Stainless steel / High grade steel	annealed quenched HB 180 - 330	120 (80-130)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,14)	0,1 (0,08-0,15)
Grey cast iron	ferrite perlitic	160 (150-170)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,14)	0,1 (0,08-0,15)
Grey cast iron with globular graphite	ferrite perlitic	140 (130-150)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,12)	0,1 (0,08-0,15)
Tempered cast iron	ferrite perlitic	130 (120-150)	0,03 (0,01-0,04)	0,04 (0,03-0,06)	0,08 (0,06-0,12)	0,1 (0,08-0,15)
Titanium/ Titanium alloys	-	50 (40-80)	0,02 (0,01-0,04)	0,04 (0,03-0,06)	0,06 (0,04-0,08)	0,08 (0,06-0,1)
Aluminium/ Non metallic	-	200 (200-400)	0,04 (0,01-0,04)	0,06 (0,03-0,06)	0,12 (0,06-0,12)	0,15 (0,08-0,15)

\* Feed rate per tooth are made to apply full slot milling with radial infeed 1 x diam.

\* Mean chip thickness has to be considered by side milling operations

\* The indicated figures are starting parameters!