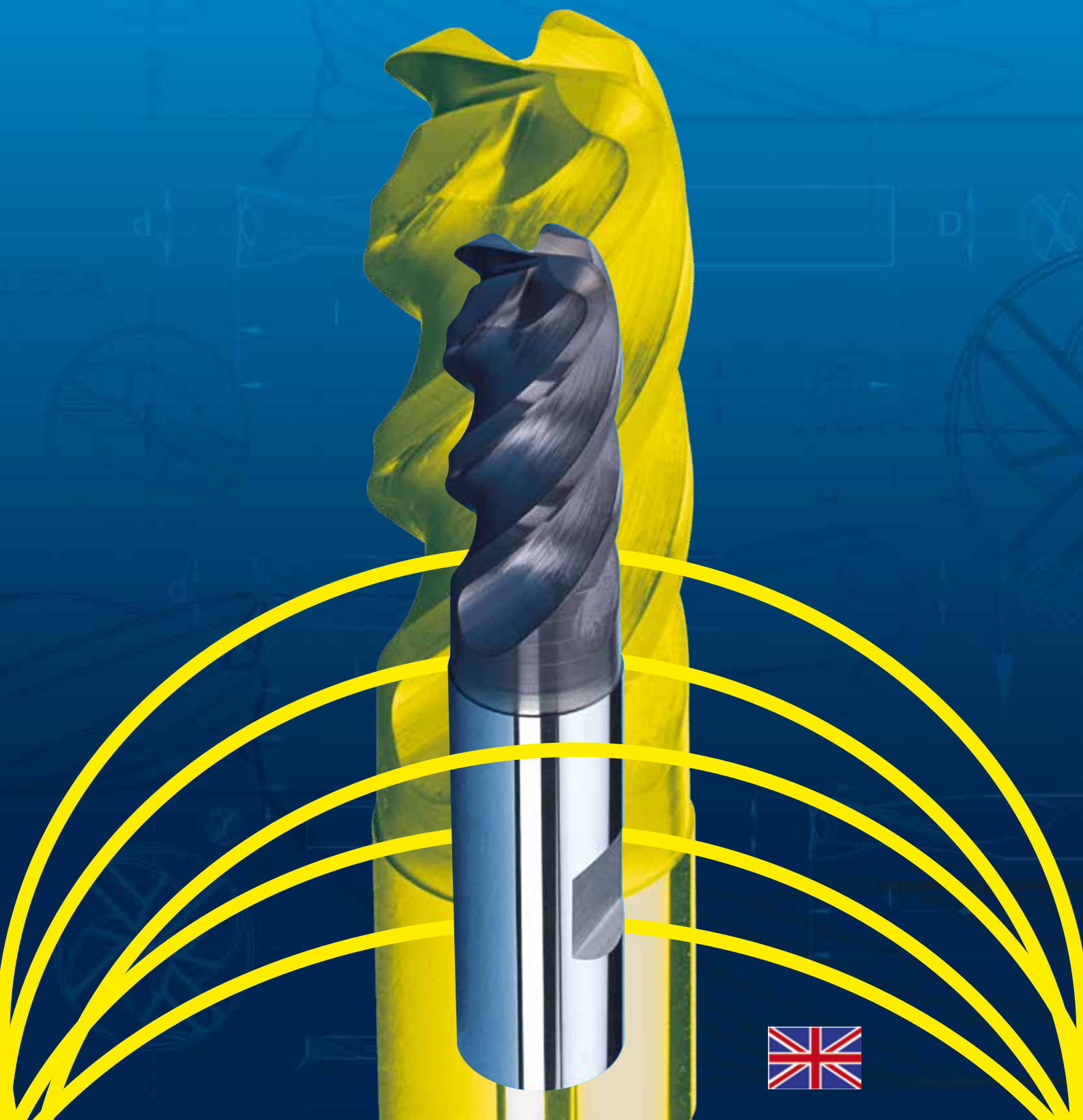
Jongen Werkzeugtechnik GmbH

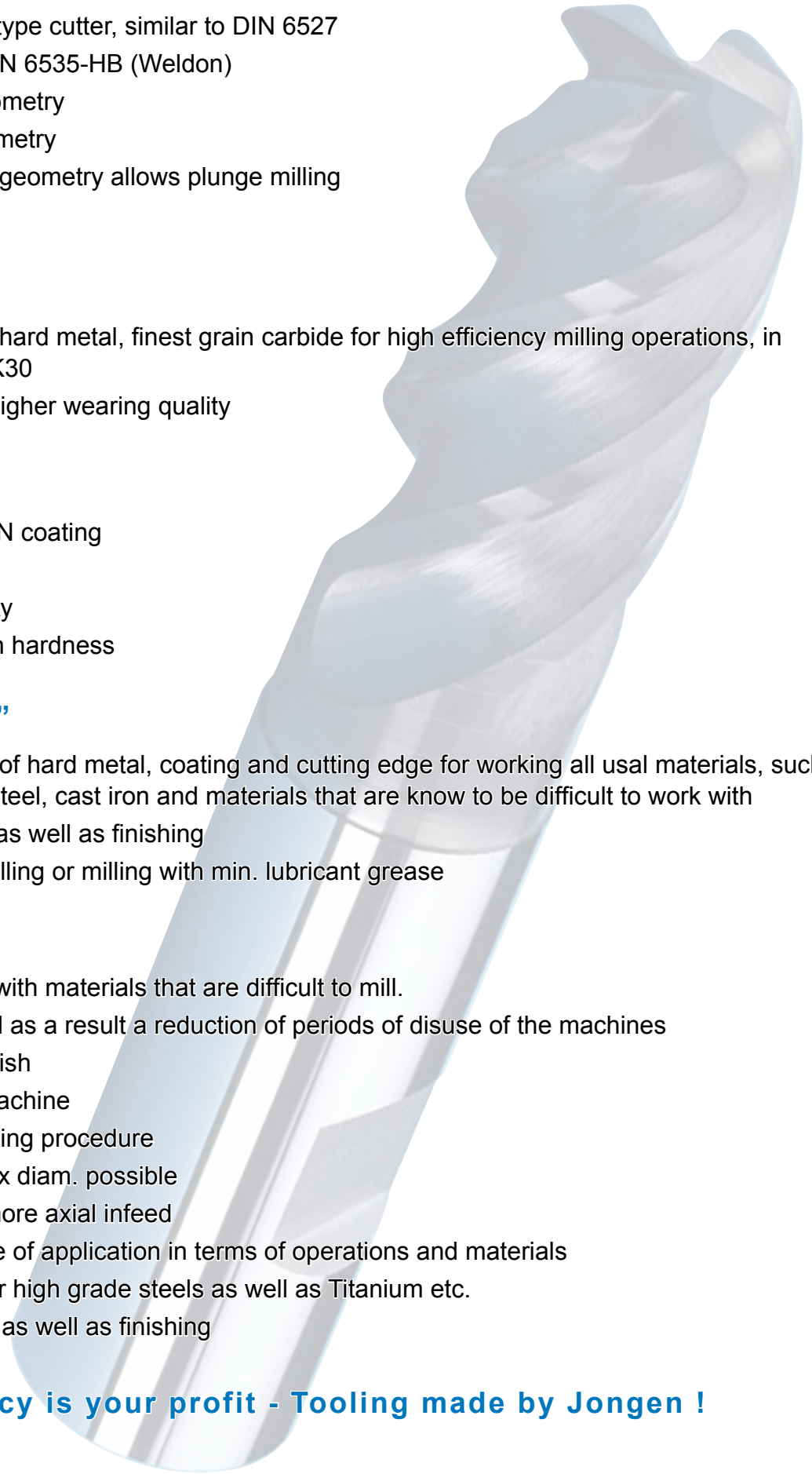
VHM 476W R TS35



VHM 476W R TS35

The Tool

- Torus 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”

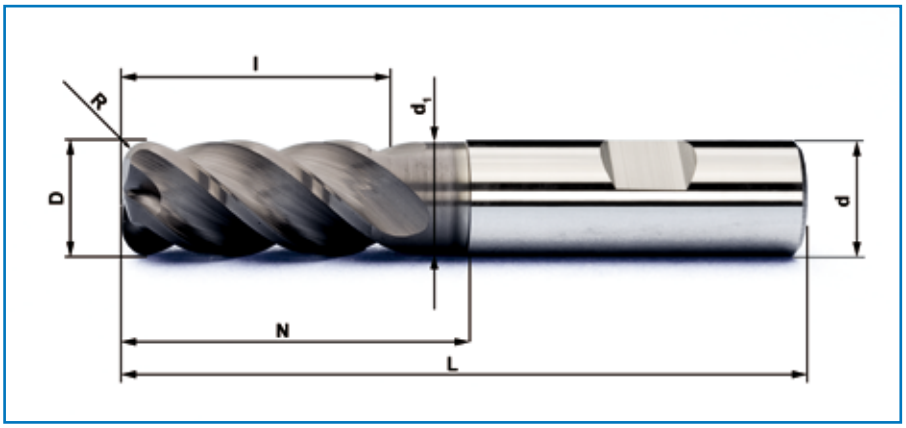
- Optimal combination of hard metal, coating and cutting edge for working all usal materials, such as steel, high grade steel, cast iron and materials that are know to be difficult to work with
-Suitable for roughing as well as finishing
-For dry milling, wet milling or milling with min. lubricant grease

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 upt 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.
- Suitable for roughing as well as finishing

➢ **Our efficiency is your profit - Tooling made by Jongen !**

Technical data



Tolerance ø:

ø 4,0 - 20,0 = $^{-0,02}_{-0,04}$

Order-No.	D	R	l	N	d_1	d^{h6}	L	Z
VHM 476W-04 R04 TS35	4	0,4	8	8	-	6	58	4
VHM 476W-05 R05 TS35	5	0,5	10	10	-	6	58	4
VHM 476W-06 R05 TS35	6	0,5	12	19	5,7	6	58	4
VHM 476W-06 R10 TS35	6	1,0	12	19	5,7	6	58	4
VHM 476W-08 R10 TS35	8	1,0	16	26	7,7	8	64	4
VHM 476W-10 R10 TS35	10	1,0	20	30	9,6	10	73	4
VHM 476W-12 R10 TS35	12	1,0	25	36	11,6	12	84	4
VHM 476W-08 R15 TS35	8	1,5	16	26	7,7	8	64	4
VHM 476W-10 R15 TS35	10	1,5	20	30	9,6	10	73	4
VHM 476W-12 R15 TS35	12	1,5	25	36	11,6	12	84	4
VHM 476W-16 R15 TS35	16	1,5	33	47	15,5	16	93	4
VHM 476W-08 R20 TS35	8	2,0	16	26	7,7	8	64	4
VHM 476W-10 R20 TS35	10	2,0	20	30	9,6	10	73	4
VHM 476W-12 R20 TS35	12	2,0	25	36	11,6	12	84	4
VHM 476W-16 R20 TS35	16	2,0	33	47	15,5	16	93	4
VHM 476W-20 R20 TS35	20	2,0	42	54	19,5	20	104	4
VHM 476W-12 R25 TS35	12	2,5	25	36	11,6	12	84	4
VHM 476W-16 R25 TS35	16	2,5	33	47	15,5	16	93	4
VHM 476W-20 R25 TS35	20	2,5	42	54	19,5	20	104	4
VHM 476W-16 R30 TS35	16	3,0	33	47	15,5	16	93	4
VHM 476W-20 R30 TS35	20	3,0	42	54	19,5	20	104	4
VHM 476W-16 R40 TS35	16	4,0	33	47	15,5	16	93	4
VHM 476W-20 R40 TS35	20	4,0	42	54	19,5	20	104	4

Cutting Data Recommendations

Material	Treatment/ Alloy	V_c (m/min)	Feed rate per tooth (f_z) 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	ferríte perlític	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	ferríte perlític	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	ferríte perlític	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.
- The indicated figures are starting parameters!
- Mean chip thickness has to be considered by side milling operations

Mean Chip Thickness:

$$h_m \approx f_z \sqrt{\frac{a_e}{D}}\,[mm] \longrightarrow f_z \approx h_m \sqrt{\frac{D}{a_e}}\,[mm]$$

h_m = *Mean chip thickness (mm)*
f_z = *Feed rate per tooth (mm)*
a_e = *radial infeed*
D = *tool diameter (mm)*

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