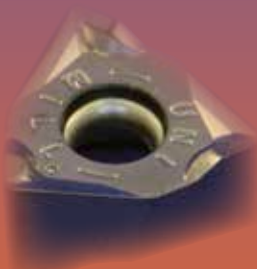




STEP MILLING Type B22



Products from



Willich



North Rhine-
Westphalia



Germany



Europe

for



Europe

and the

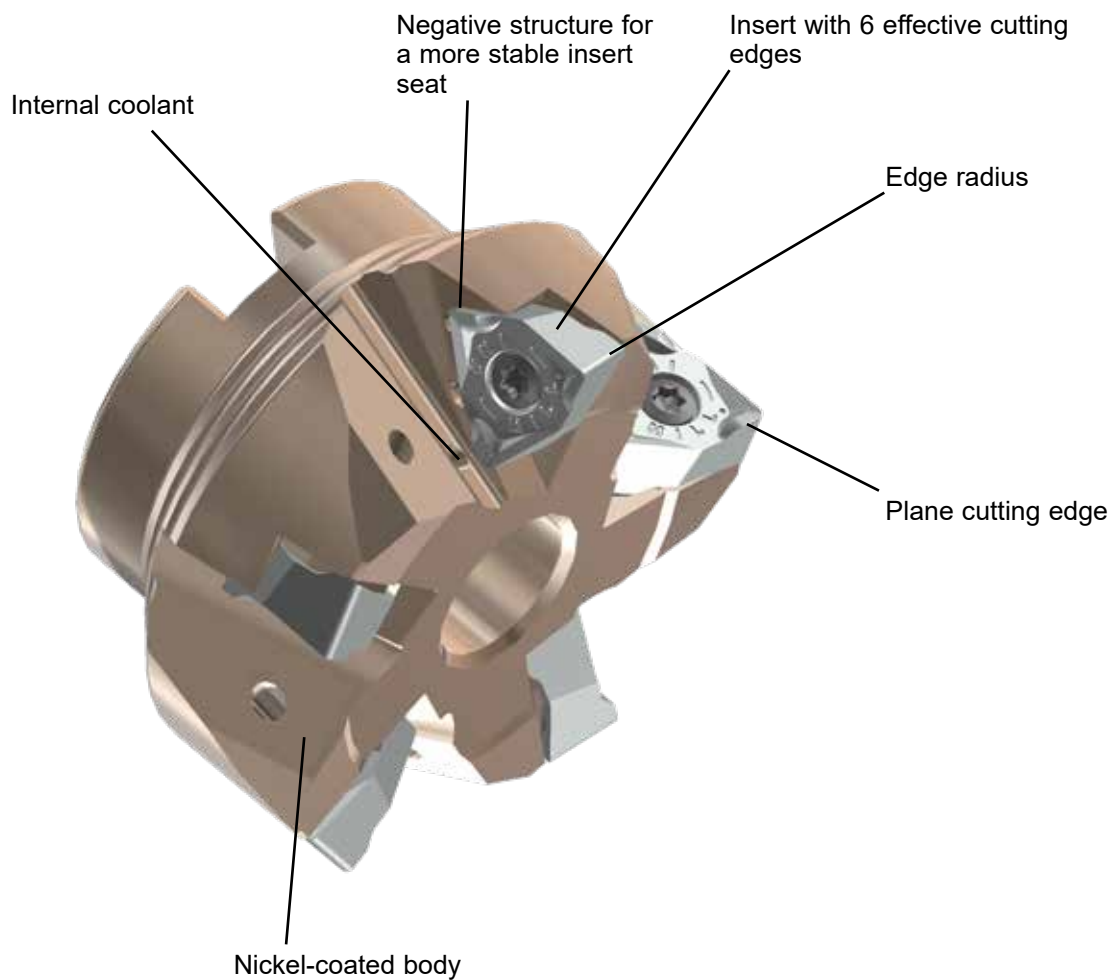


Jongen Werkzeugtechnik GmbH

Siemensring 11 · D-47877 Willich · Germany
Phone: 0049 2154 9285 2900 · Fax: 0049 2154 9285 9 2900
www.jongen.de · Email: export@jongen.de

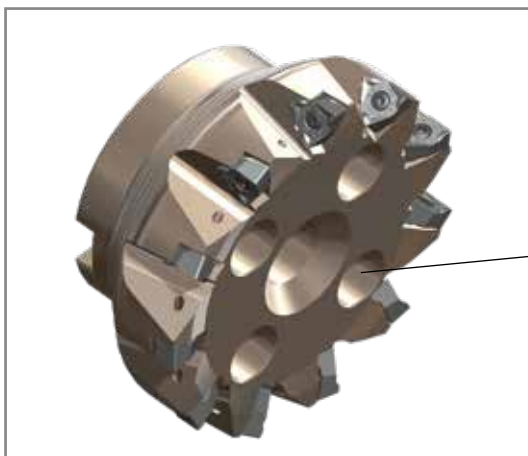
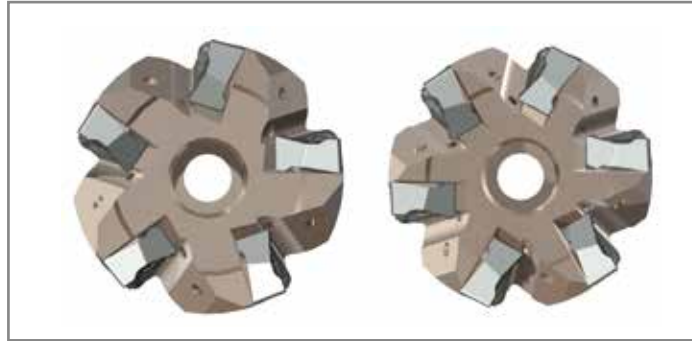
THE TOOL

- ☞ Especially efficient step milling cutter for processing roughing and finishing operations
- ☞ Axial depth of cut up to 7 mm possible
- ☞ Tools are made of high-strength and additionally hardened 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.



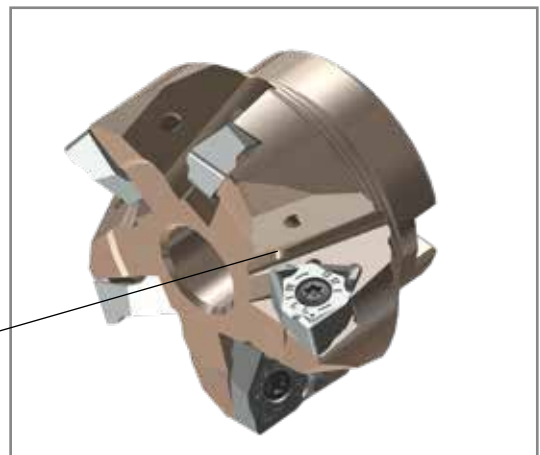
CHARACTERISTICS

- ☞ Step milling cutter designed for steel, stainless steel and cast iron processing
- ☞ This new step milling generation impresses thanks to the number of teeth and the soft cutting manner, as a result of the effectively positive rake angle
- ☞ The ground insert offers high precision and surface quality
- ☞ Thanks to positive/negative entangled clearance angles on the insert's circumference, an optimal and almost vibration-free insert seat is granted
- ☞ A variety of different teeth numbers allow an optimal choice for routine machining processes



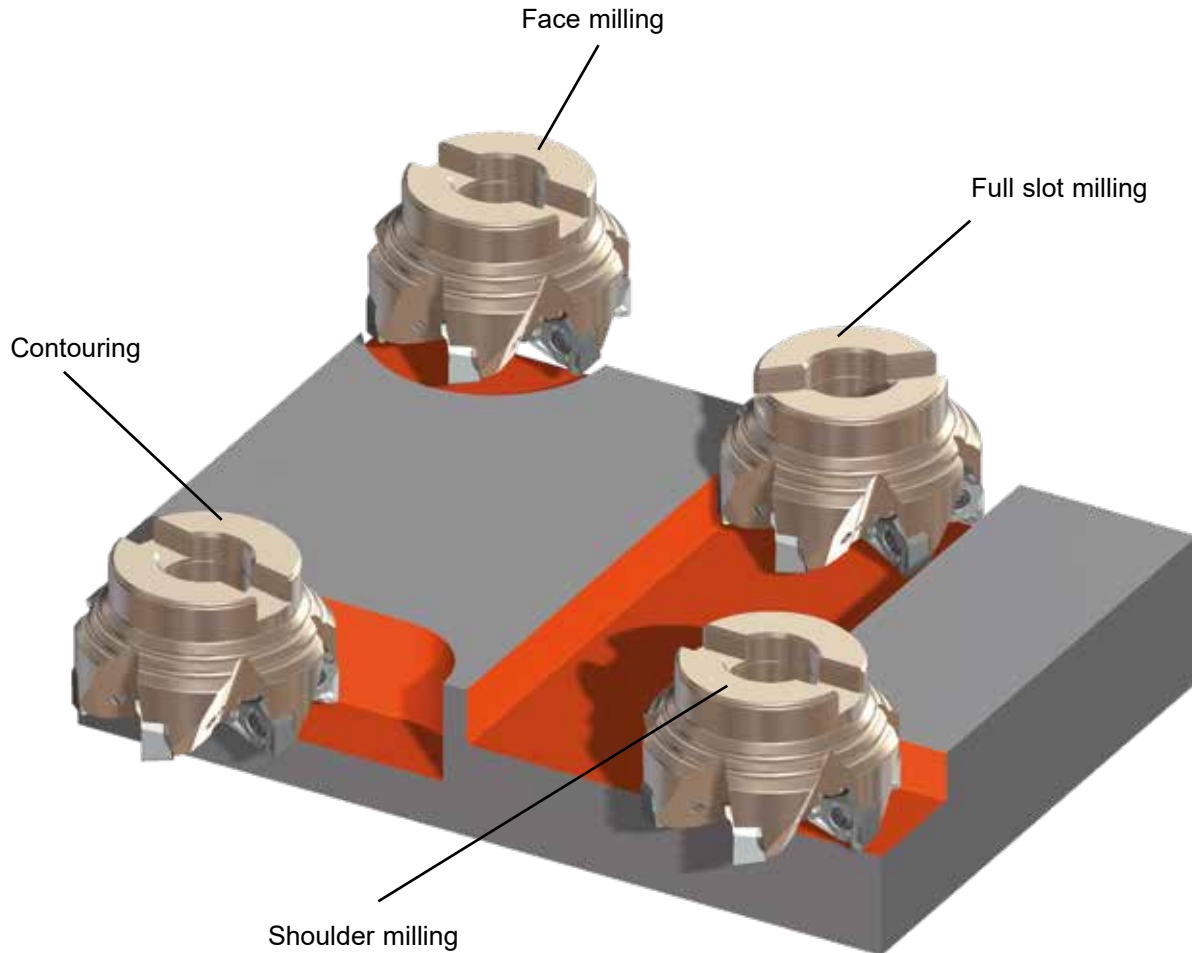
- ☞ Holders are made to DIN 8030. Starting from $\varnothing 125$ the tools are equipped with supplementary boreholes for the corresponding tool holder

supplementary boreholes from $\varnothing 125$



- ☞ Step mills from $\varnothing 50 - 100$ include internal coolant passages

APPLICATION AREAS



THE INSERT



JMB22-853R08

Precision ground insert, with chip breaker and plane chamfer, chamfered and rounded cutting edge.



JMB22-753R08

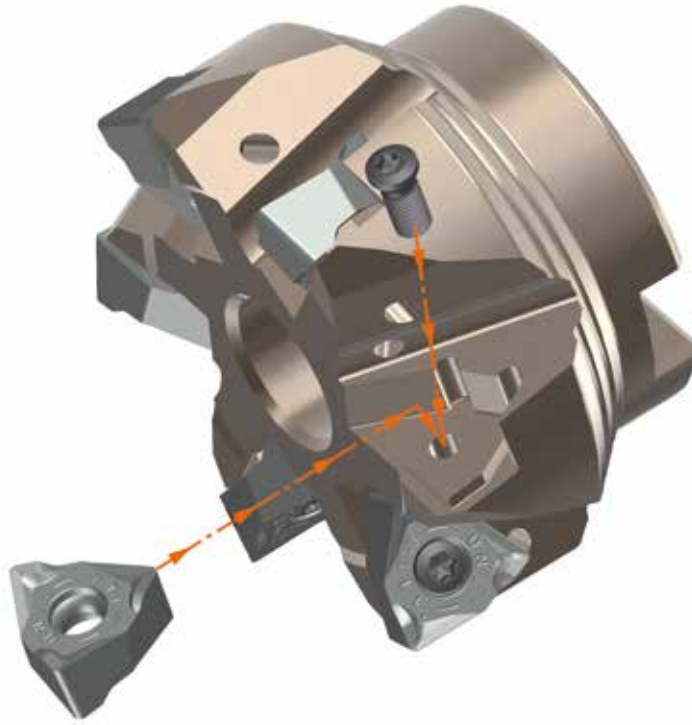
Precision sintered insert, with chip breaker and plane chamfer, chamfered and rounded cutting edge.

Due to the manufacturing process a parallelism error up to 0,05 mm is possible

☞ Precision ground, with 6 effective cutting edges, highly positive chip breaker, axial depth of cut max. 7 mm

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

Inserts' fitting



Following carbide qualities are offered:

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.

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.

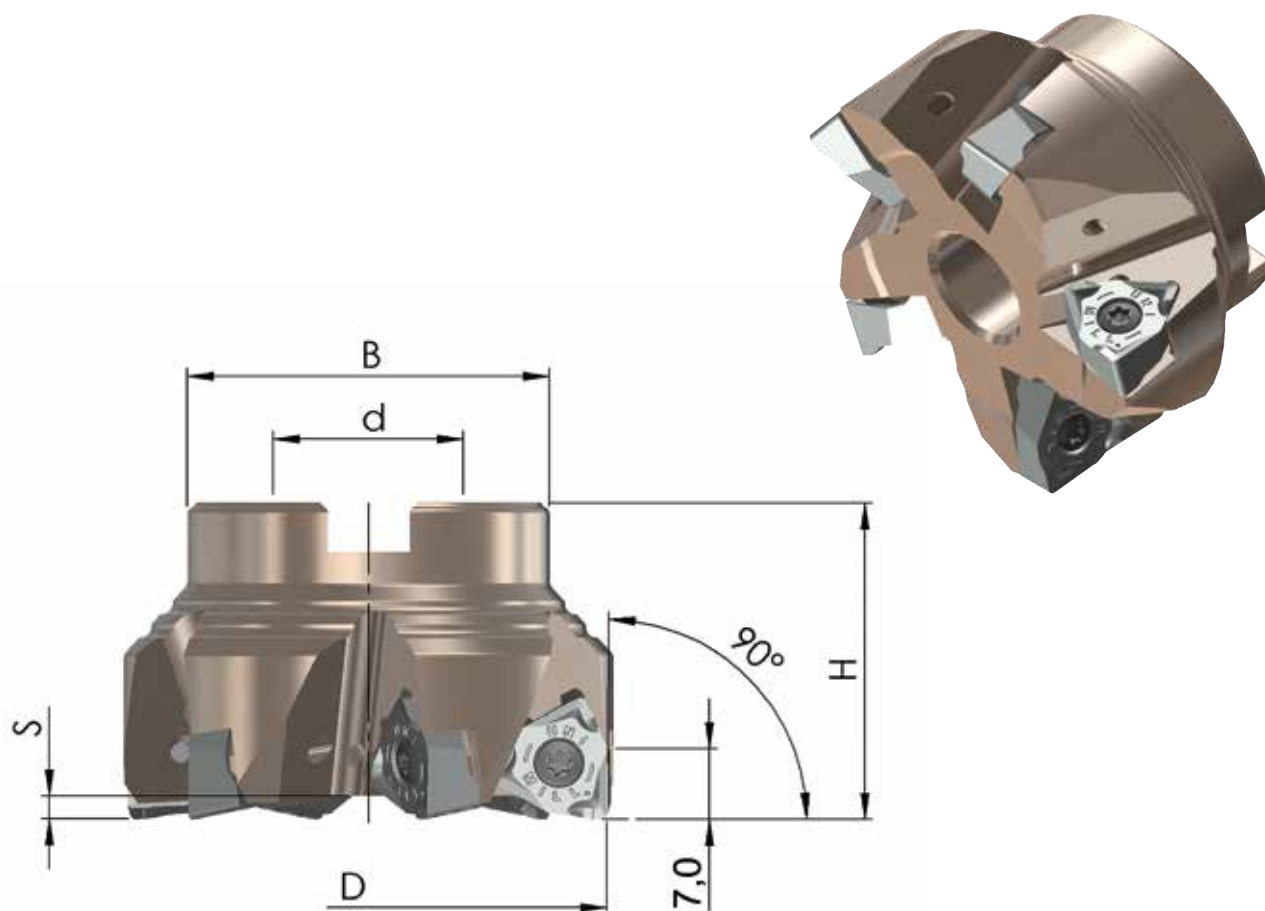
HT20



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 No.	D	H	d	B	S	Z	MS
90PP-050-853-4	50	40	22	46	2,75	4	MS 10x25-912
90PP-063-853-5	63	40	22	46	2,75	5	MS 10x25-912
90PP-080-853-6	80	50	27	58	5,75	6	MS 12x35-912
90PP-100-853-7	100	50	32	78	3,75	7	MS 16x35-6912
90PP-125-853-9	125	63	40	90	3,75	9	MS 20x55-7991
90PP-160-853-11	160	63	40	90	3,75	11	MS 20x55-7991
Close tooth pitch							
90PP-050-853-5	50	40	22	46	2,75	5	MS 10x25-912
90PP-063-853-6	63	40	22	46	2,75	6	MS 10x25-912
90PP-080-853-7	80	50	27	58	5,75	7	MS 12x35-912
90PP-100-853-9	100	50	32	78	3,75	9	MS 16x35-6912
90PP-125-853-11	125	63	40	90	3,75	11	MS 20x55-7991
90PP-160-853-13	160	63	40	90	3,75	13	MS 20x55-7991




MS= Central screw

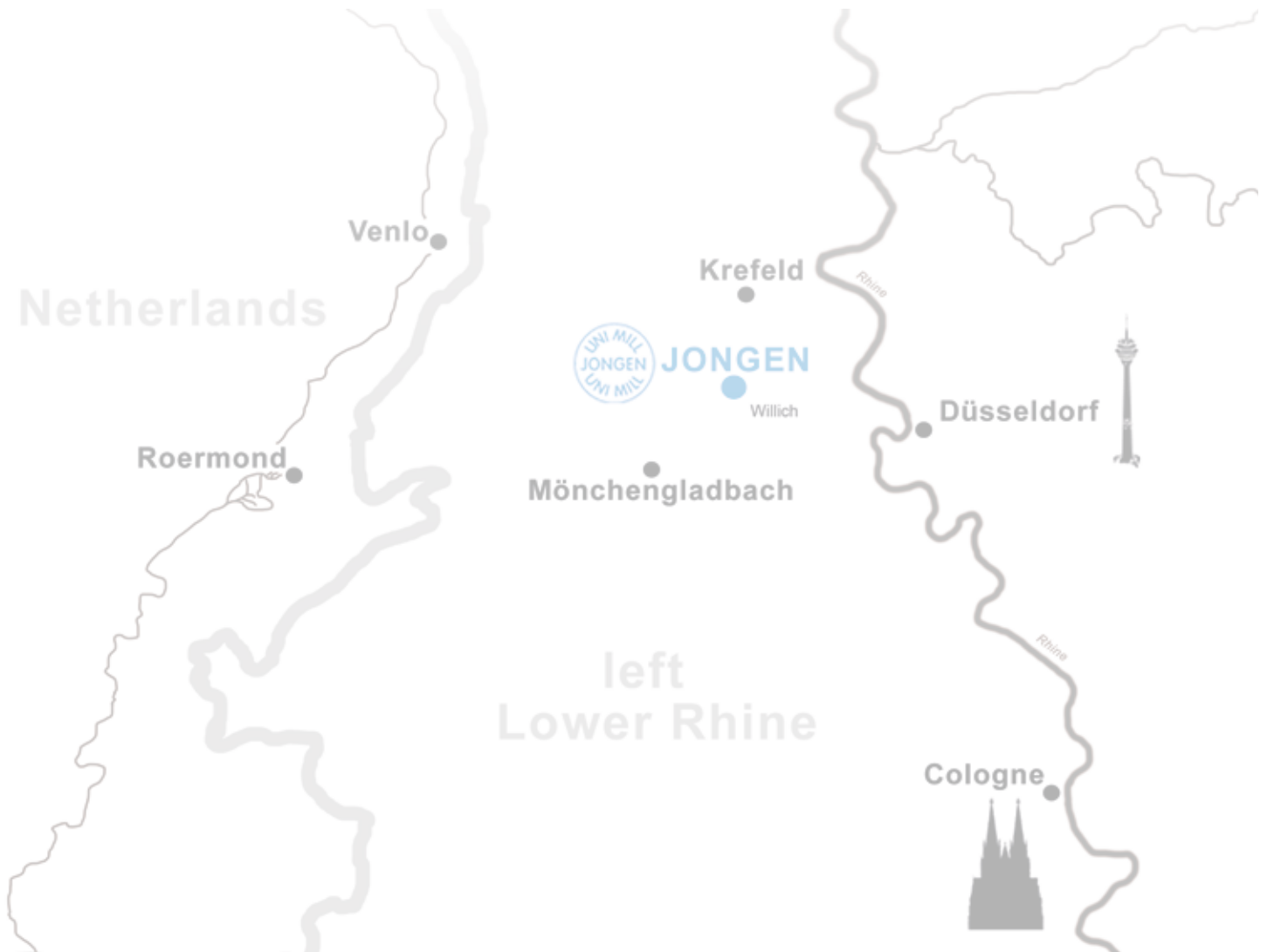
Inserts

			HT45 (code 31)	HT32 (code 33)	HT20 (code 32)				
	JMB22-753R08- IK 12,9x7,8 R0,8 U 	Order- No.	B22A-GW31	B22A-DX33	B22A-AT32	Parallelism error up to 0,05 mm!			
	JMB22-853R08- IK 12,9x7,8 R0,8 M S 	Order- No.	B22B-RX31	B22B-NW33	B22B-JZ32				
			10	10	10				

Key to symbols see catalogue page XV-39

Spare Parts

	SS 4,0-2	Tightening torque 3,2-3,3 Nm	Fixing screw
	T 15	Screw driver	
	100 g	Heavy duty grease	



PARAMETERS STEP MILLING

Errors and omissions excepted.

Material	Hardness	Quality	Depth of cut [mm]		Cutting speed Vc [m/min]	fz [mm]					
			ae	ap max.		ø50	ø63	ø80	ø100	ø125	ø160
P	Structural steel, Unalloyed steel	HT45 (HT32)	-0,25 D -0,50 D -0,75 D >0,75 D - 1 D	-7,0 -7,0 -7,0 -7,0	250 (200-350)	0,22 (0,16-0,26)	0,24 (0,20-0,28)	0,27 (0,23-0,31)	0,27 (0,23-0,31)	0,27 (0,23-0,31)	0,27 (0,23-0,31)
						0,18 (0,14-0,22)	0,20 (0,16-0,24)	0,23 (0,19-0,27)	0,23 (0,19-0,27)	0,23 (0,19-0,27)	0,23 (0,19-0,27)
P	Tool steel, Heat-treatable Alloyed steel	180-350 HB (HT32)	-0,25 D -0,50 D -0,75 D >0,75 D - 1 D	-7,0 -7,0 -7,0 -7,0	220 (160-280)	0,20 (0,16-0,24)	0,22 (0,18-0,26)	0,24 (0,20-0,28)	0,24 (0,20-0,28)	0,24 (0,20-0,28)	0,24 (0,20-0,28)
						0,17 (0,13-0,22)	0,18 (0,14-0,22)	0,20 (0,16-0,24)	0,20 (0,16-0,24)	0,20 (0,16-0,24)	0,20 (0,16-0,24)
M	Stainless-steel, High grade steel, High alloyed steel	<270 HB HT32 (HT45)	-0,25 D -0,50 D -0,75 D >0,75 D - 1 D	-7,0 -7,0 -7,0 -7,0	240 (140-300)	0,20 (0,16-0,24)	0,22 (0,18-0,26)	0,24 (0,20-0,28)	0,24 (0,20-0,28)	0,24 (0,20-0,28)	0,24 (0,20-0,28)
S	Heat-resistant super alloys, Titan alloys	HT32 (HT45)	-0,25 D -0,50 D -0,75 D >0,75 D - 1 D	-7,0 -7,0 -7,0 -7,0	60 (40-200)	0,20 (0,16-0,22)	0,22 (0,18-0,26)	0,20 (0,16-0,24)	0,20 (0,16-0,24)	0,20 (0,16-0,24)	0,20 (0,16-0,24)
						0,17 (0,13-0,22)	0,18 (0,14-0,22)	0,17 (0,13-0,21)	0,17 (0,13-0,21)	0,17 (0,13-0,21)	0,17 (0,13-0,21)
K	Grey cast iron	HT20	-0,25 D -0,50 D -0,75 D >0,75 D - 1 D	-7,0 -7,0 -7,0 -7,0	250 (180-350)	0,29 (0,25-0,33)	0,30 (0,26-0,34)	0,32 (0,28-0,36)	0,32 (0,28-0,36)	0,32 (0,28-0,36)	0,32 (0,28-0,36)
						0,25 (0,21-0,29)	0,27 (0,23-0,31)	0,28 (0,24-0,32)	0,28 (0,24-0,32)	0,28 (0,24-0,32)	0,28 (0,24-0,32)
K	Globular graphite cast iron	HT20 (HT45)	-0,25 D -0,50 D -0,75 D >0,75 D - 1 D	-7,0 -7,0 -7,0 -7,0	200 (130-280)	0,20 (0,16-0,24)	0,24 (0,20-0,28)	0,26 (0,22-0,30)	0,26 (0,22-0,30)	0,26 (0,22-0,30)	0,26 (0,22-0,30)
						0,17 (0,13-0,21)	0,20 (0,16-0,24)	0,21 (0,17-0,25)	0,21 (0,17-0,25)	0,21 (0,17-0,25)	0,21 (0,17-0,25)

The above mentioned data are standard values. Up and down corrections are admitted depending on the machine type, tool and holding fixture.