

Step Milling System

Type B32

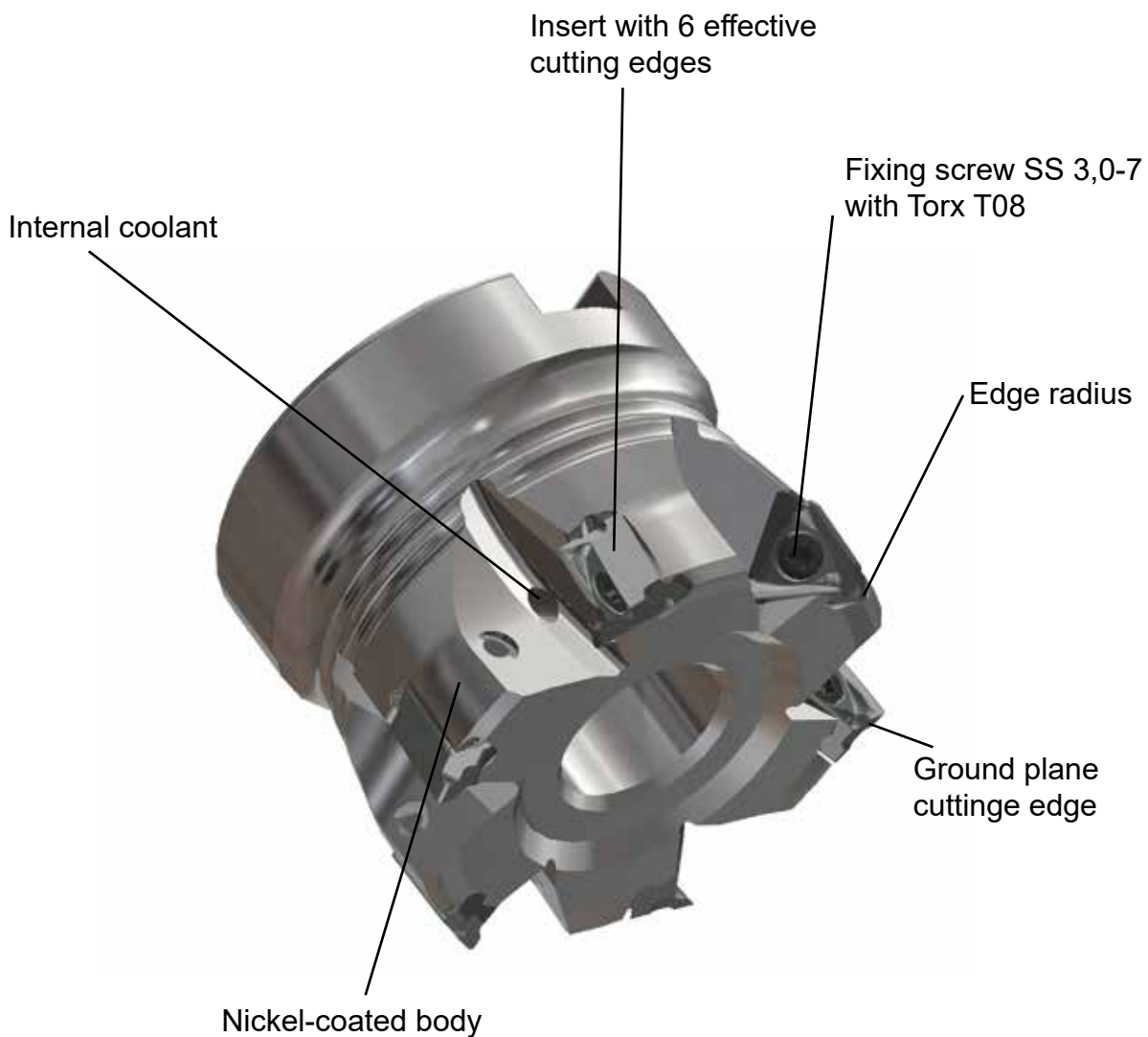
ap max. 6 mm
eff. 6 cutting edges



THE TOOL

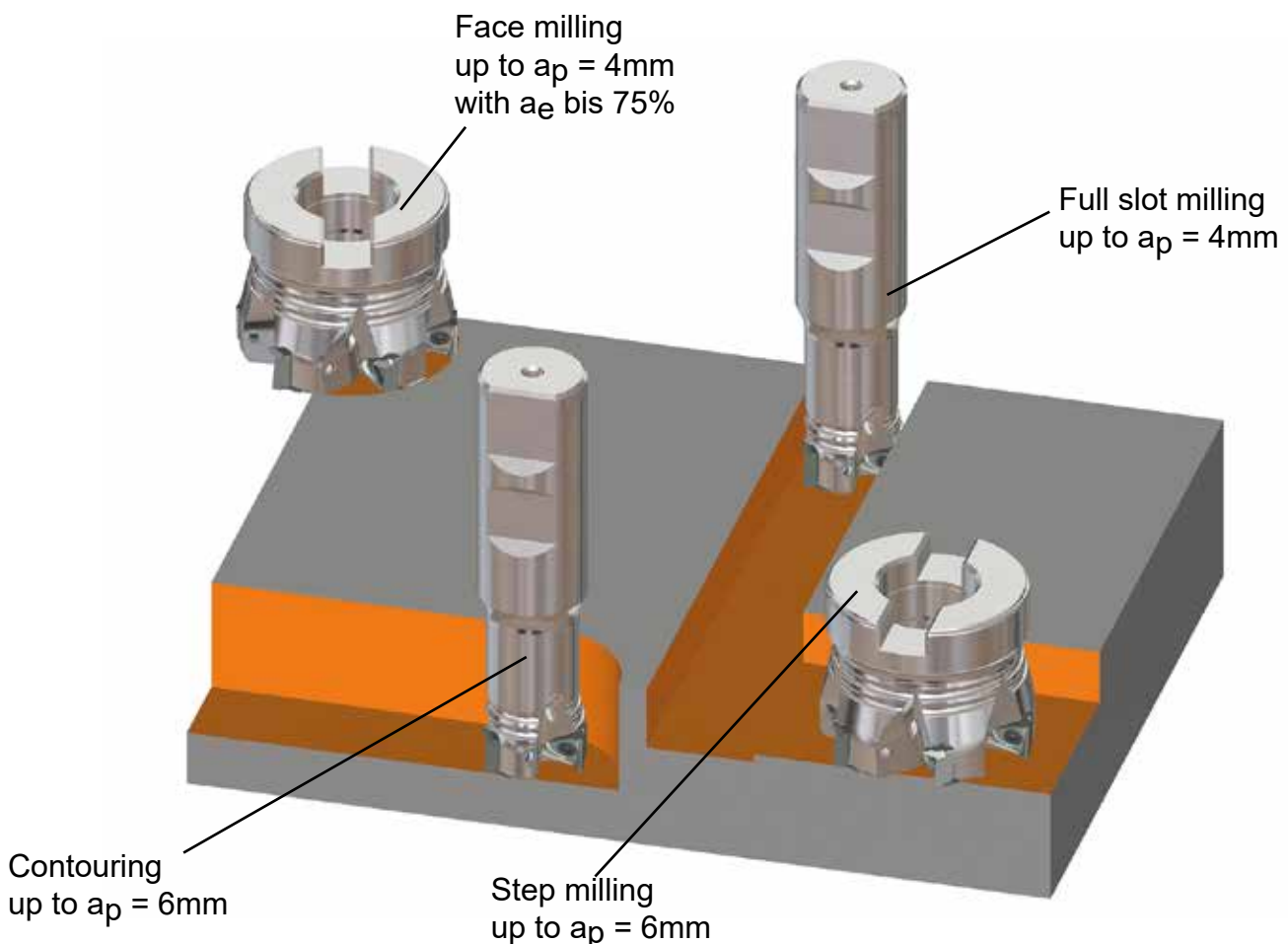
The milling tool type B32 has been developed especially for the machining of step-, slot- and face milling operations, in terms of roughing and finishing steels, high grade steels, cast iron, difficult to mill materials, as well as non-ferrous metals and aluminum.

These tools are available as shell type mills, with diameter range from 32 to 80 mm, in standard and closed tooth pitch and as shank type mills, with diameter range 25-32 mm, in standard and close pitch.



PERFORMANCE CRITERIA

- High productivity thanks to 6 effective cutting edges
- High chip removal rate by an axial depth of cut of up to 6mm
- A high surface quality and precision is given by the ground plane chamfer of the sintered types JMB32-713HR05 and JMB32-713SR05, respectively by the completely ground insert type JMB32-713AR05
- Axial depth of cut of up to 6 mm ensure almost step-free side walls
- The optimal coordinated cutting edge with cutting materials grant high tool lives
- The tools are made of solid and additionally tempered tool steel and can therefore withstand highest charges
- Nickel-coated surfaces of the tool cause high resistance against reweldings and corrosions
- Shell type mills are made to DIN 8030-A
The shank type mills are made to DIN 1835-B
- All tools include internal coolant passages
- All tools are available in standard and closed tooth pitch, offering a great choice for all usual machining processes



THE INSERTS

- JMB32-713HR05:** Precision ground insert with ground plane chamfer. The cutting edge is provided with a negative chamfer and the edges are rounded. Depending on the carbide type this inserts is applicable on steel, high grade steel or cast iron.
- JMB32-713SR05:** Precision sintered insert with ground plane chamfer. The cutting edge is provided with a negative chamfer and the edges are rounded. This insert is applicable on high-grade steel, titanium and super alloys.
- JMB31-713AR05:** Precision ground insert with polished rake face. The insert is sharp edged and applicable for aluminium, as wells as non-ferrous metals

JMB32-713HR05



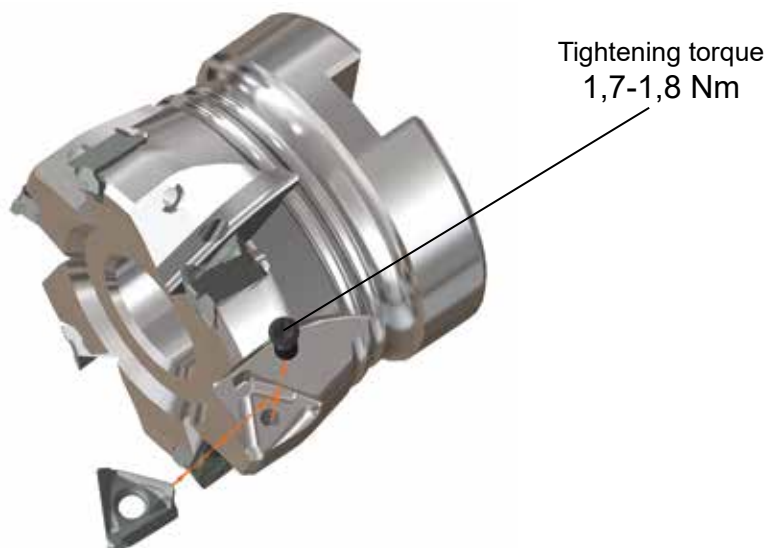
JMB32-713SR05



JMB32-713AR05



Inserts' fitting



Following carbide qualities are offered:

HC45



Code 41 , ISO-Classification P30-35

Very tough fine grain quality with a thick power nitride 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 , ISO-Classification M25-M30

Hard wearing and tough finest grain carbide with power nitride 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 , ISO-Classification M20-M30

Wear resistant and tough finest grain hard metal quality with power nitride 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 , ISO-Classification K15-K20

Very hard wearing fine grain carbide with power nitride 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.

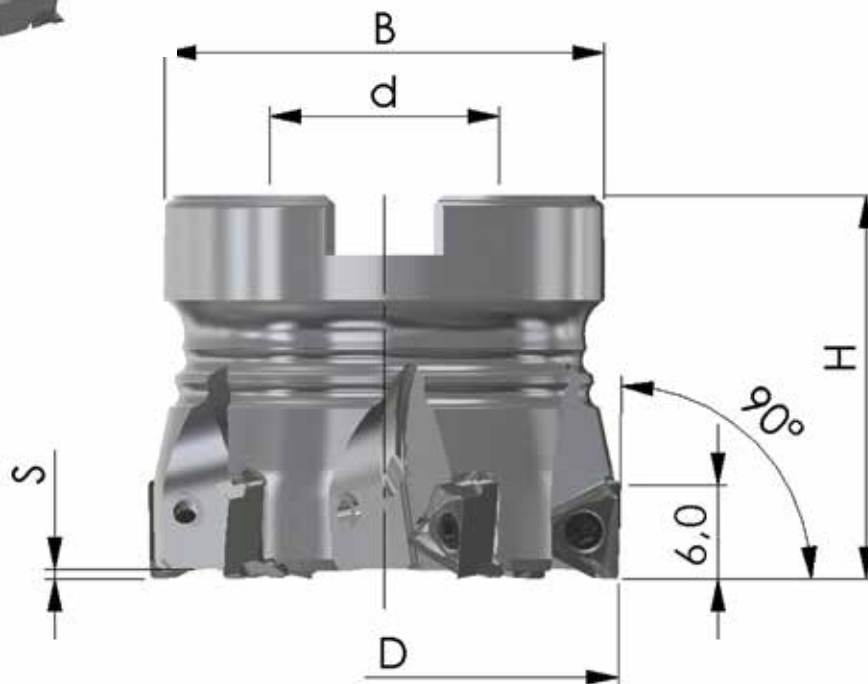
K15M



Code 8, ISO-Classification K10

Very hard wearing fine grain carbide, for 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 nonferrous heavy materials and aluminium up to a Si-content of approx. 8%.

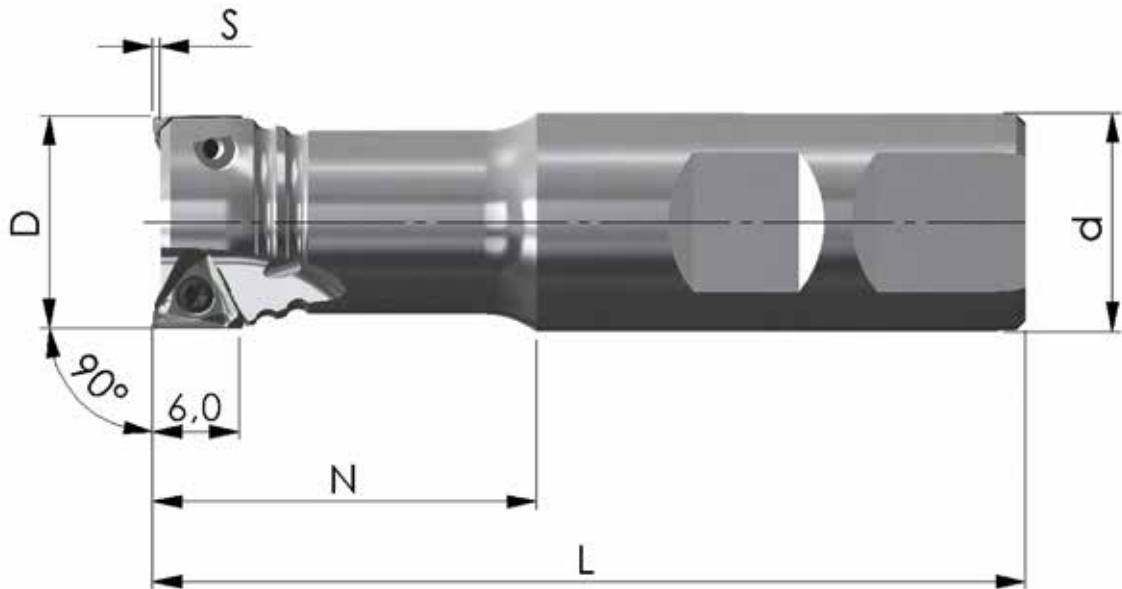
TECHNICAL DATA



Order No.	D	H	d H6	B	S	Z	MS
90PP-032-B32-3	32	40	16	29	1,0	3	DS12
90PP-040-B32-3	40	40	16	38	1,0	3	MS-8x25-912
90PP-050-B32-5	50	40	22	46	1,0	5	MS-10x25-912
90PP-063-B32-5	63	40	22	46	1,0	5	MS-10x25-912
90PP-080-B32-7	80	50	27	58	1,0	7	MS-12x35-912
Close tooth pitch:							
90PP-032-B32-4	32	40	16	29	1,0	4	DS12
90PP-040-B32-4	40	40	16	38	1,0	4	MS-8x25-912
90PP-050-B32-6	50	40	22	46	1,0	6	MS-10x25-912
90PP-063-B32-7	63	40	22	46	1,0	7	MS-10x25-912
90PP-080-B32-9	80	50	27	58	1,0	9	MS-12x35-912










MS= Central screw

TECHNICAL DATA






Order No.	D	L	d	N	S	Z
90PP-25-25-B32-2	25	100	25	43	1,0	2
90PP-32-25-B32-3	32	100	25	43	1,0	3
Close tooth pitch:						
90PP-25-25-B32-3	25	100	25	43	1,0	3
90PP-32-25-B32-4	32	100	25	43	1,0	4

INSERTS AND GENERAL CUTTING PARAMETERS

			HC45 (code 41)	HC30 (code 52)	XC35 (code 46)	HC20 (code 53)	K15M (code 8)	
	JMB32-713HR05 IK 7,46x6,33 R0,5	f_z [mm]	 0,10 (0,05-0,25)	 0,10 (0,05-0,30)		 0,15 (0,10-0,30)		
	JMB32-713SR05 IK 7,46x6,33 R0,5	f_z [mm]			 0,10 (0,05-0,30)			
	JMB32-713AR05 IK 7,46x6,33 R0,5	f_z [mm]					 0,15 (0,05-0,30)	
			10	10	10	10	10	

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	120 (60 - 160)	120 (60 - 180)			80 (60 - 120)	
HC20			260 (180 - 350)			80 (40 - 120)
K15M				400 (300-600)		

SPARE PARTS

	SS 3,0-7	Anzugsmoment 1,7-1,8 Nm	Fixing screw
	T 08	Screw driver	
	100 g	Heavy duty grease	



DETAILED CUTTING PARAMETERS FOR STEP MILLING OPERATIONS

Material		Hardness	Quality	Depth of cut [mm]		V _c [m/min.]		
				a _e max.	a _p max.			
P	Structural steel Unalloyed steel	<180 HB	HC45 (HC30)	0,25 D	6,0	250 (200-350)		
				0,50 D	6,0			
				0,75 D	4,0			
				>0,75 D - 1 D	4,0			
	Tool steel, Heat-treatable steel Alloyed steel	180-350 HB	HC45 (HC30)	0,25 D	6,0	220 (160-280)		
							0,50 D	6,0
				0,75 D	4,0			
				>0,75 D - 1 D	4,0			
M	Ferritic stainless steels	<270 HB	HC30	0,25 D	6,0	240 (140-300)		
							0,50 D	6,0
							0,75 D	4,0
				>0,75 D - 1 D	4,0			
	Ferritic stainless steels	<270 HB	XC35	0,25 D	6,0	120 (60-200)		
							0,50 D	6,0
							0,75 D	4,0
				>0,75 D - 1 D	4,0			
	Austenitic, martensitic stainless steels		XC35	0,25 D	6,0	80 (60-140)		
					0,50 D		6,0	
					0,75 D		4,0	
				>0,75 D - 1 D	4,0			
S	Heat-resistant super alloys Titan alloys		XC35	0,25 D	6,0	60 (40-200)		
					0,50 D		6,0	
				0,75 D	4,0			
				>0,75 D - 1 D	4,0			
K	Grey cast iron	<800 N/mm ²	HT20	0,25 D	6,0	250 (180-350)		
							0,50 D	6,0
							0,75 D	4,0
							>0,75 D - 1 D	4,0
	Globular graphite cast iron	<350 N/mm ²	HT20 (HC45)	0,25 D	6,0	200 (130-280)		
							0,50 D	6,0
							0,75 D	4,0
							>0,75 D - 1 D	4,0
K	Aluminium Non-ferrous metals	bis 12% Si	K15M	0,25 D	6,0	500 (500-1000)		
							0,50 D	6,0
							0,75 D	4,0
							>0,75 D-1 D	4,0

The above mentioned data are standard values.

Up and down corrections are admitted depending on the machine type, tool and holding fixture.

