

MACHINING STAINLESS STEELS

MACHINING STAINLESS STEELS



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➔ BRIGHT PROSPECTS...

BRIGHT PROSPECTS...

...introducing Pokolm-Voha's new range of tooling for milling stainless steels as well as acid- and heat-resistant materials. Those metals are indispensable materials for all kinds of components, where resistance against various corodibilities and hygienicly perfect surfaces are required. Furthermore, these surfaces should show an appealing visual appearance for multiple usage in decorative applications. Special requirements of plastics processing industries result in highest demands for those stainless-, acid- and heat-resistant materials, essentially possible though alloying with chrome, nickel and molybdenum. Those materials combine universal machinability with highest durability for various final products.

These requirements are very conscious at Pokolm-Voha and have been analysed carefully, to ensure **maximum efficiency** to our customers

Optimized tool-geometries, carbide grades and coatings, specially developed for the characteristics of stainless-, acid- and heat-resistant materials, guarantee excellent machining results. Specially developed for dry-machining, our tooling allows a **cost reduction up to 14%** without changing any cutting parameter. For further reductions you should benefit from our long-time **know-how** and **advice of Pokolm-Voha's applications engineers**.

General purpose Milling Cutter Bodies for round inserts with diameters between 18 and 160 mm, with normal and coarse tooth pitch and 0° or 7° axial rake angle cover most of all possible applications in stainless-, acid- and heat-resistant materials. Our indexable inserts, made from an optimized substrate, offer highest wear-resistance and together with our approved PVGO-coating guarantee best possible process reliability, even in high-temperature-alloys. Sintered chip guide steps and high precision supporting lands secure reduced temperature in cutting zone and thus longer tool life.

Our new carbide grade **M 40** with improved chip guide steps and newly developed coating **PVST** are available for Milling Cutter Bodies of our **SLOTWORX®** - as well as **QUADWORX®** - „S“ and „M“ ranges. M40 and PVST are our new features for **efficient machining of stainless-, acid- and heat-resistant materials**. Extremely tough and high-temperature resistant carbide together with our modified AlTiN-coating reduce built-up cutting edges, increase thermal stability and reduce frictional heat.

Our range of **SLOTWORX®** - cutter bodies was completed by diam.16 mm and 42 mm with threaded shanks. With these additional dimensions, we cover our complete range of dimensions of our regular line of Square Shoulder Face Milling and Slotting End Mills.

Those already available **QUADWORX®** Milling Cutters were completed by another insert geometry and thus our line for smaller tool diameters was extended. Our **QUADWORX®**- „M“- range was completed by an other insert 03 48 896 in M40 with PVST coating and concave moulding for machining stainless-, acid- and heat-resistant materials.

Completely new is our line **QUADWORX®**- „S“ from diam.14 up to 25 mm with threaded shanks and with our patent protected **DuoPlug®**-connection for maximum concentricity and rigidity. Also for that line, our new carbide grade M40 as well as our new coating PVST is now available. Further information about our new line are available from our applications engineers or just ask for literature from Pokolm-Voha.



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MILLING CUTTER BODIES FOR ROUND INSERTS

r = 5 l 0° und 7° positive axial rake angle

The all-rounder:

Tools are applicable for a wide range of milling operations

- all our cutter bodies have patent protected incorporated insert seats and internal coolant supply
- **NEW:** inserts made from optimized substrate for maximum process reliability and edge life, now also for stainless-, acid- and heat-resistant materials

Milling Cutter Bodies		Catalogue No.	d ₁	d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z	Ref. pg. Arbors Ref. Accessories		Stock Item	Features
Duo Plug®, neutral															
	20 200 SG	20	10	5	35	-	-	M 12	18,5	2	-				
	3 25 200 SG	25	10	5	35	2,8	-	M 16	23,5	3	-				
Threaded Shank, neutral															
	18 200	18	10	5	29	-	-	M 10	18	2	-				
	20 200	20	10	5	29	-	-	M 10	18	2	-				
	2 25 200	25	10	5	33	2,8	-	M 12	21	2	-				
	3 25 200	25	10	5	33	2,8	-	M 12	21	3	-				
	4 30 201	30	10	5	33	2,8	-	M 12	21	4	-				
	4 30 200	30	10	5	43	2,8	-	M 16	29	4	-				
	5 35 200	35	10	5	43	2,8	-	M 16	29	5	-				
	N 5 42 200	42	10	5	43	2,8	-	M 16	29	5	-				
	6 42 200	42	10	5	43	2,8	-	M 16	29	6	-				
Threaded shank, 7° positive rake															
	3 25 200/7	25	10	5	32,5	2,5	-	M 12	21	3	-				
	6 42 200/7	42	10	5	42,5	2,5	-	M 16	29	6	-				

Milling Cutter Bodies		Catalogue No.	d ₁	d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z	Ref. pg. Arbors Ref. Accessories		Stock Item	Features
Shell type, neutral															
	N 5 42 310	42	10	5	43	2,8	-	16	35	5	-				
	6 42 310	42	10	5	43	2,8	-	16	35	6	-				
Shell type, 7° positive rake															
	6 42 310/7	42	10	5	42,5	3,5	-	16	35	6	-				
	7 52 310/7	52	10	5	42,5	3,5	-	22	40	7	-				

Indexable Inserts		Catalogue No.	steel	high-temperature -alloys	stainless steel	cast iron	non-ferrous materials	hardened steel	Carbide Grade	Features
Indexable Round Inserts-RDPX 1003 MOT										
	02 10 897							P25	PVGO	

Operation data (f _z /a _p)		CUTTING MATERIAL AND COATING			
		r	f _z /a _p	P25 PVGO	
Stainless steel		5	f _z (mm) a _p (mm)	0,15 - 0,6 0,4 - 1,0	
High-temperature-alloys		5	f _z (mm) a _p (mm)	0,1 - 0,4 0,2 - 1,0	

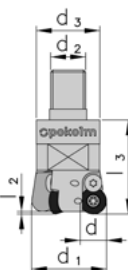
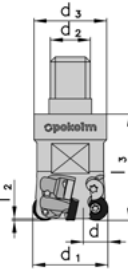
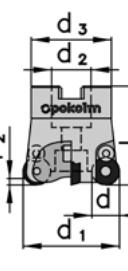
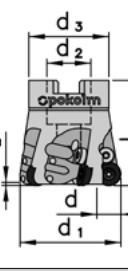
Surface Speeds V _c in m/min					
Material		r	kind of machining	P25 PVGO	
Stainless steel		5	roughing finishing	80 - 200 80 - 230	
High temperature alloys		5	roughing finishing	20 - 50 30 - 80	

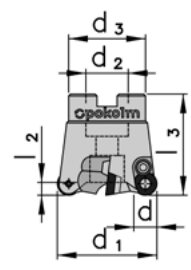


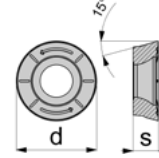
MILLING CUTTER BODIES FOR
ROUND INSERTS

r = 6 l 0° und 7° positive axial rake angle

- the all-rounder for machining centres, for roughing and finishing applications
- partly with shim
- all our cutter bodies have patent protected incorporated insert seats and internal coolant supply
- **NEW:** inserts made from optimized substrate for maximum process reliability and edge life, now also for stainless-, acid- and heat-resistant materials

Milling Cutter Bodies		Catalogue No.	d ₁	d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z	Ref. pg. Arbors Ref. Accessories		Stock Item	Features
Threaded shank, neutral															
	24 200	24	12	6	33	-	-	M 12	21	2	-				
	35 200	35	12	6	43	3	-	M 16	29	3	-				
	4 35 200	35	12	6	43	3	-	M 16	29	4	-				
	42 200	42	12	6	43	3	-	M 16	29	4	-				
	5 42 200	42	12	6	43	3	-	M 16	29	5	-				
Threaded shank, 7° positive rake															
	3 35 200/7	35	12	6	42,5	3	-	M 16	29	3	-				
	4 35 200/7	35	12	6	42,5	3	-	M 16	29	4	-				
Shell type, neutral															
	4 42 310	42	12	6	43	3	-	16	35	4	-				
	5 42 310	42	12	6	43	3	-	16	35	5	-				
	52 310	52	12	6	53	3,5	-	22	40	5	-				
Shell type, 7° positive rake															
	52 310/7	52	12	6	52,5	3,5	-	22	40	5	-				
	66 310/7	66	12	6	52,5	3,5	-	27	48	6	-				
	80 310/7	80	12	6	52,5	3,5	-	27	60	7	-				

Milling Cutter Bodies		Catalogue No.	d ₁	d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z	Ref. pg. Arbors Ref. Accessories		Stock Item	Features
Shell type, with shim, 7° positive rake															
	42 310/7 HL	42	12	6	44	3,5	-	16	35	4	-				
	52 310/7 HL	52	12	6	52,5	3,5	-	22	40	5	-				
	66 310/7 HL	66	12	6	52,5	3,5	-	27	40	6	-				
	80 310/7 HL	80	12	6	52,5	3,5	-	27	40	7	-				

Indexable Inserts		Catalogue No.	steel	high-temperature alloys	stainless steel	cast iron	non-ferrous materials	hardened steel	Carbide Grade	Features
Indexable Round Inserts-RDPX 12T3 M0S										
	03 12 897K								P25	PVGO

Operation data (f _z /a _p)		CUTTING MATERIAL AND COATING			
Material		r	f _z /a _p	P25 PVGO	
Stainless steel		6	f _z (mm) a _p (mm)	0,2 - 0,8 0,5 - 2,0	
High-temperature-alloys		6	f _z (mm) a _p (mm)	0,15 - 0,5 0,3 - 1,5	

Surface Speeds V _c in m/min					
Material		r	kind of machining	P25 PVGO	
Stainless steel		6	roughing finishing	80 - 200 80 - 230	
High-temperature-alloys		6	roughing finishing	20 - 50 30 - 80	

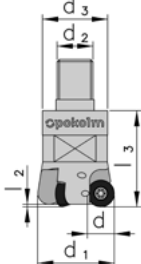
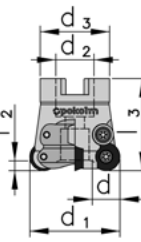
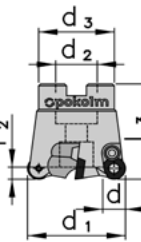
Accessories and suitable tool holders can be selected from our main catalogue „MILLING“ 2007/2008.

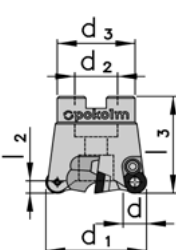


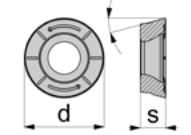
MILLING CUTTER BODIES FOR
ROUND INSERTS

r = 8 | 0° and 7° positive axial rake angles

- our first choice when using SK 50 machines for medium and heavy milling-operations
- tools with 7° rake angle are outstanding through low energy consumption
- partly with shim
- all our cutter bodies have patent protected incorporated insert seats and internal coolant supply
- **NEW:** inserts made from optimized substrate for maximum process reliability and edge life, now also for stainless-, acid- and heat-resistant materials

Milling Cutter Bodies		Catalogue No.										Ref. pg. Arbors Ref. Accessories Stock Item Features			
		d ₁	d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z					
Threaded shank, neutral															
	32 200	32	16	8	43,5	-	-	M 16	29	2	-				
	35 201	35	16	8	43,5	4	-	M 16	29	3	-				
Shell type, neutral															
	52 300	52	16	8	53,5	4,7	-	22	40	4	-				
	66 300	66	16	8	53,5	5,1	-	27	48	5	-				
	80 300	80	16	8	53,5	5,8	-	27	60	6	-				
	100 300	100	16	8	53,5	5,8	-	32	70	7	-				
Shell type, 7° positive rake															
	5 52 300/7	52	16	8	53	4,1	-	22	40	5	-				
	66 300/7	66	16	8	53	4,6	-	27	48	5	-				
	6 66 300/7	66	16	8	53	5,1	-	27	48	6	-				
	80 300/7	80	16	8	53	5,1	-	27	60	6	-				
	100 300/7	100	16	8	53	5,1	-	32	70	7	-				
	125 300/7	125	16	8	53	5,1	-	40	90	8	-				
	160 300/7	160	16	8	53	5,1	-	40	120	9	-				

Milling Cutter Bodies		Catalogue No.										Ref. pg. Arbors Ref. Accessories				Stock Item	Features
			d ₁	d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z						
Shell type, with shim, 7° positive rake																	
	52 300/7 HL	52	16	8	53	4,1	-	22	40	4	-						
	66 300/7 HL	66	16	8	53	4,1	-	27	48	5	-						
	80 300/7 HL	80	16	8	53	4,1	-	27	60	6	-						
	100 300/7 HL	100	16	8	53	4,1	-	32	70	7	--						
																	

Indexable Inserts		Catalogue No.	steel	high-temperature alloys	stainless steel	cast iron	non-ferrous materials	hardened steel	Carbide Grade	Features
Indexable Round Inserts-RDPX 1604 M0T										
		04 16 897							P25	PVGO

Operation data (f _z /a _p)		CUTTING MATERIAL AND COATING				
Material		r		f _z /a _p		P25 PVGO
Stainless steel		8		f _z (mm) a _p (mm)	0,3 - 1,0 0,6 - 3,0	
High-temperature-alloys		8		f _z (mm) a _p (mm)	0,15 - 0,5 0,3 - 2,0	

Surface Speeds V _c in m/min		CUTTING MATERIAL AND COATING				
Material		r		kind of machining		P25 PVGO
Stainless steel		8		roughing finishing	80 - 200 80 - 230	
High-temperature-alloys		8		roughing finishing	20 - 50 30 - 80	

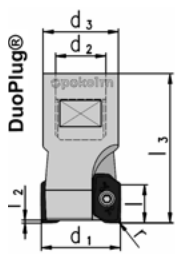
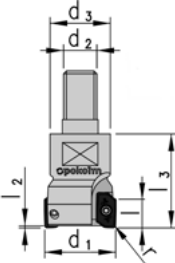
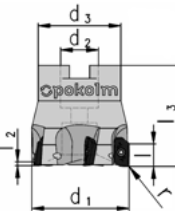
Accessories and suitable tool holders can be selected from our main catalogue „MILLING“ 2007/2008.



SQUARE SHOULDER FACE MILLING AND SLOTTING CUTTER BODIES

SLOTWORX® I r 1

- Capable for multiple application possibilities.
- all our cutter bodies have patent protected incorporated insert seats and internal coolant supply
 - NEW:** newly developed inserts grade M 40, together with our new coating PVST and improved insert-geometry with positive ground chip breaker guarantee maximum process reliability and edge life for machining stainless-, acid- and heat-resistant materials

Milling Cutter Bodies		Catalogue No.										Ref. pg. Arbors Ref. Accessories Stock Item Features				
		d ₁	l	r	l ₃	l ₂	l ₁	d ₂	d ₃	z						
Duo Plug®																
	2 16 267 SG	16	10	1	38	2,5	-	M 10	15	2	-		HSC			
	2 20 267 SG	20	10	1	40	2,5	-	M 12	18,6	2	-		HSC			
	3 25 267 SG	25	10	1	43	2,5	-	M 16	21,5	3	-		HSC			
Threaded shank																
	2 16 267	16	10	1	29	2,5	-	M 8	13,8	2	-					
	2 20 267	20	10	1	29	2,5	-	M 10	18	2	-					
	3 25 267	25	10	1	33	2,5	-	M 12	21	3	-					
	4 32 267	32	10	1	43	2,5	-	M 16	29	4	-					
	5 42 267	42	10	1	43	2,5	-	M 16	29	5	-					
Shell type																
	5 42 367	42	10	1	43	2,5	-	16	35	5	-					
	6 52 367	52	10	1	53	2,5	-	22	40	6	-					

Indexable Inserts		Catalogue No.	steel	high-temperature -alloys	stainless steel	cast iron	non-ferrous materials	hardened steel	Carbide Grade	Features
Rectangular Indexable Inserts-XDMT 10 T3										
	04 67 896								M40	PVST

Operation data (f _z /a _p)					CUTTING MATERIAL AND COATING	
Material		l	r	f _z /a _p	M40 PVST	
Stainless steel		10	1	f _z (mm) a _p (mm)	0,08 - 0,3 0,1 - 9	
High-temperature-alloys		10	1	f _z (mm) a _p (mm)	0,08 - 0,3 0,1 - 9	

Surface Speeds V _c in m/min					
Material		l	r	kind of machining	M40 PVST
Stainless steel		10	1	roughing finishing	80 - 200 80 - 230
High-temperature-alloys		10	1	roughing finishing	20 - 50 30 - 80

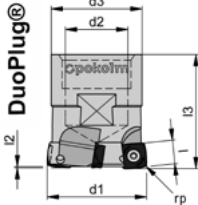
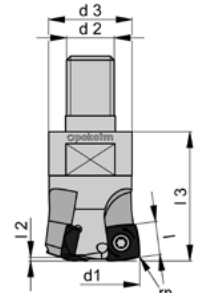
Accessories and suitable tool holders can be selected from our main catalogue „MILLING“ 2007/2008.

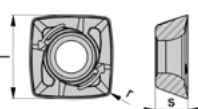


MILLING CUTTER BODIES
QUADWORX®

for QUADWORX® inserts size „S”

- very high metal removal and extremely easy cutting
- all our cutter bodies have patent protected incorporated insert seats and internal coolant supply
- **NEW:** newly developed inserts grade M 40, together with our new coating PVST and improved insert-geometry with chip guide steps guarantee maximum process reliability and edge life for machining stainless-, acid- and heat-resistant materials

Milling Cutter Bodies		Catalogue No.										Ref. pg. Arbors Ref. Accessories Stock Item Features			
		d ₁	l	r _p	l ₃	l ₂	l ₁	d ₂	d ₃	z					
Duo Plug®															
	2 16 247 SG	16	7	1,3	38,5	1	-	M 10	15	2	-				
	3 18 247 SG	18	7	1,3	40	1	-	M 10	15	3	-				
	3 20 247 SG	20	7	1,3	40	1	-	M 12	18,5	3	-				
	4 25 247 SG	25	7	1,3	40	1	-	M 16	21,5	4	-				
Threaded shank															
	2 14 247	14	7	1,3	28,5	1	-	M 8	13,8	2	-				
	2 16 247	16	7	1,3	28,5	1	-	M 8	13,8	2	-				
	3 18 247	18	7	1,3	28,5	1	-	M 8	13,8	3	-				
	3 20 247	20	7	1,3	28,5	1	-	M 10	18	3	-				
	4 25 247	25	7	1,3	32,5	1	-	M 12	21	4	-				

Indexable Inserts		Carlogue No.		steel	high-temperature -alloys	stainless steel	cast iron	non-ferrous materials	hardened steel	Carbide Grade	Features
Quadworx® size „S”											
	02 47 896								M40	PVST	

Operation data (f _z /a _p)				CUTTING MATERIAL AND COATING		
Material		l	f _z /a _p	M40 PVST		
Stainless steel		7	f _z (mm) a _p (mm)	0,2 - 1,0 0,1 - 0,5		
High-temperature-alloys		7	f _z (mm) a _p (mm)	0,2 - 0,8 0,1 - 0,5		

Surface Speeds V _c in m/min					
Material		l	kind of machining	M40 PVST	
Stainless steel		7	roughing finishing	80 - 180 110 - 250	
High-temperature-alloys		7	roughing finishing	40 - 80 60 - 120	

For further information about our new line QUADWORX® „S” please ask our applications engineers or just ask for literature from Pokolm-Voha.

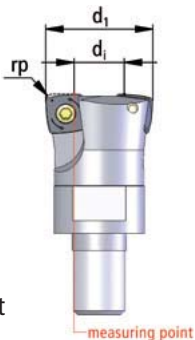
⊕ TECHNICAL INFORMATION

Please take notice of the theoretical corner radius, which has to be programmed. The face milling cutter leaves a material stock not pre-determinable. When applying the tools listed please take the following value into account:

This dimension “t” is 0.51 mm.

Catalogue No.	d ₁	d _i	Size of remaining stock t
2 16 247 SG	16	5,66	0,51
3 18 247 SG	18	7,72	0,51
3 20 247 SG	20	9,72	0,51
4 25 247 SG	25	14,78	0,51
2 14 247	14	3,7	0,51
2 16 247	16	5,66	0,51
3 18 247	18	7,72	0,51
3 20 247	20	9,72	0,51
4 25 247	25	14,78	0,51

Definition of measuring point
for Laser-linear-monitoring:
Please use diameter: d_i





MILLING CUTTER BODIES
QUADWORX®

for QUADWORX® inserts size „M”

- four cutting-edges per insert for highly efficient usage
- very high metal removal and extremely easy cutting
- all our cutter bodies have patent protected incorporated insert seats and internal coolant supply
- **NEW:** newly developed inserts grade M 40, together with our new coating PVST and improved insert-geometry with chip guide steps guarantee maximum process reliability and edge life for machining stainless-, acid- and heat-resistant materials

Milling Cutter Bodies		Catalogue No.	d ₁	l	r _p	l ₃	l ₂	l ₁	d ₂	d ₃	z	Ref. pg. Arbors	Ref. Accessories	Stock Item	Features
Duo Plug®															
	2 22 248 SG	22	9	1,5	35,5	1,5	-	M 12	18,5	2	-				
	3 25 248 SG	25	9	1,5	40	1,5	-	M 16	23,5	3	-				
Threaded shank															
	2 22 248	22	9	1,5	29	1,5	-	M 10	18	2	-				
	3 25 248	25	9	1,5	33	1,5	-	M 12	21	3	-				
	4 30 248	30	9	1,5	42	1,5	-	M 16	29	4	-				
	4 35 248	35	9	1,5	43	1,5	-	M 16	29	4	-				
	5 35 248	35	9	1,5	43	1,5	-	M 16	29	5	-				
	5 42 248	42	9	1,5	42	1,5	-	M 16	29	5	-				
Shell type															
	5 42 348	42	9	1,5	42,5	1,5	-	16	40	5	-				
	6 52 348	52	9	1,5	53	1,5	-	22	40	6	-				

Indexable Inserts		Catalogue No.	steel	high-temperature alloys	stainless steel	cast iron	non-ferrous materials	hardened steel	Carbide Grade	Features
Quadworx® size „M”										
	03 48 896								M40	PVST

Operation data (f _z /a _p)			CUTTING MATERIAL AND COATING			
Material		l	f _z /a _p	M40 PVST		
Stainless steel		9	f _z (mm) a _p (mm)	0,3 - 1,2 0,2 - 0,9		
High-temperature-alloys		9	f _z (mm) a _p (mm)	0,3 - 0,9 0,2 - 0,7		

Surface Speeds V _c in m/min						
Material		l	kind of machining	M40 PVST		
Stainless steel		9	roughing finishing	80 - 180 110 - 250		
High-temperature-alloys		9	roughing finishing	40 - 80 60 - 120		

For further information about our new line QUADWORX® „M” please ask our applications engineers or just ask for literature from Pokolm-Voha.

TECHNICAL INFORMATION

Please take notice of the theoretical corner radius, which has to be programmed. The face milling cutter leaves a material stock not pre-determinable. In order to consider this fact for following tooling , we have estimated this value.

This dimension “t” is 0.65 mm.

Catalogue No.	d ₁	d _i	Size of remaining stock t
2 22 248 SG	22	7,1	0,65
3 25 248 SG	25	9,8	0,65
2 22 248	22	7,1	0,65
3 25 248	25	9,8	0,65
4 30 248	30	14,7	0,65
4 35 248	35	19,6	0,65
5 35 248	35	19,8	0,65
5 42 248	42	26,5	0,65
5 42 348	42	26,5	0,65
6 52 348	52	36,5	0,65

Definition of measuring point for Laser-linear-monitoring:
Please use diameter: di

