



THE
ORIGINAL

HPC FACE MILLS
for rough and finish machining

THE ULTIMATE EVOLUTION!

AXIALLY CLOSED CHIP FLUTES

EXTREMELY HIGH NUMBER OF CUTTING EDGE
FOR FINISH MACHINING CUTTERS (I.E. 63 MM DIA =12, 125 MM DIA =27)

EASY TO SET – PRECISION ADJUSTABLE CUTTING EDGES

REPLACEABLE PCD INSERTS AND CARBIDE CHIP GUIDING ELEMENTS

WEAR-RESISTANT STEEL AND MODULAR DESIGNED BODY

PCD CUTTING INSERTS RE-GRINDABLE UP TO 10X (FINISH CUTTERS)

REGENERATION SERVICE FOR PCD-INSERTS FOR ROUGH MILLING CUTTERS

APPLICABLE FOR MQL-APPLICATIONS





Integrated coolant exit



Clamping of the inserts



*Adjustable
PCD inserts*



Carbide chip guide element



Integrated coolant exit



Secure chip evacuation

ROUGH MACHINING 

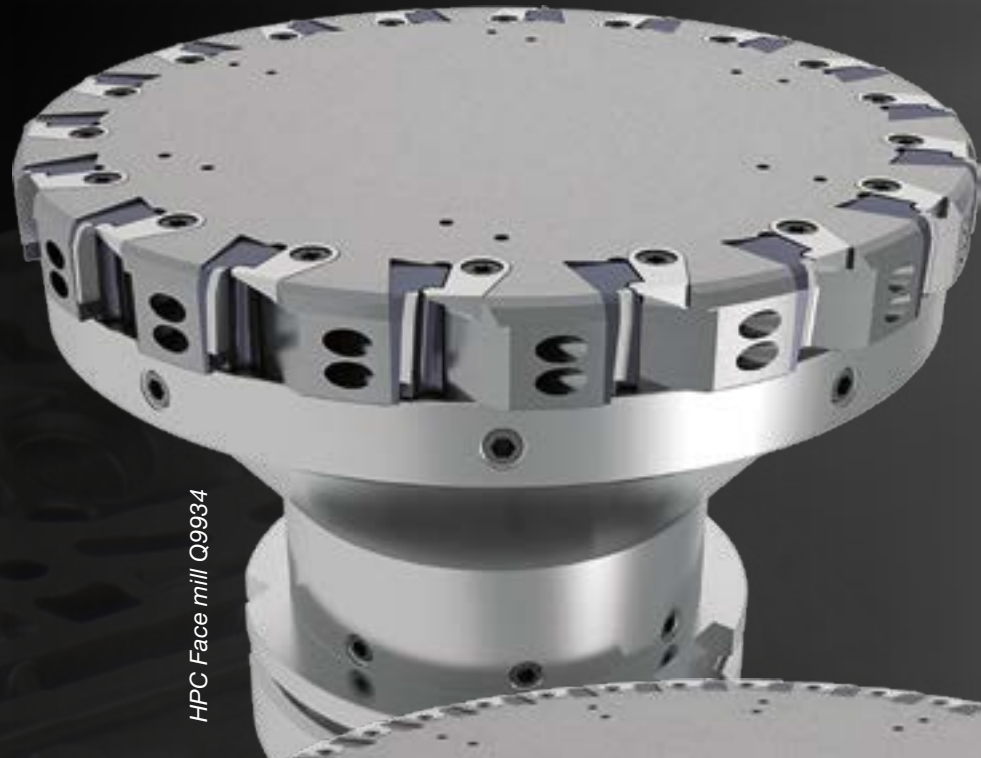
 **FINISH MACHINING**



MILLING CUTTERS FOR

ROUGH MACHINING

UP TO 8 MM CUTTING DEPTH

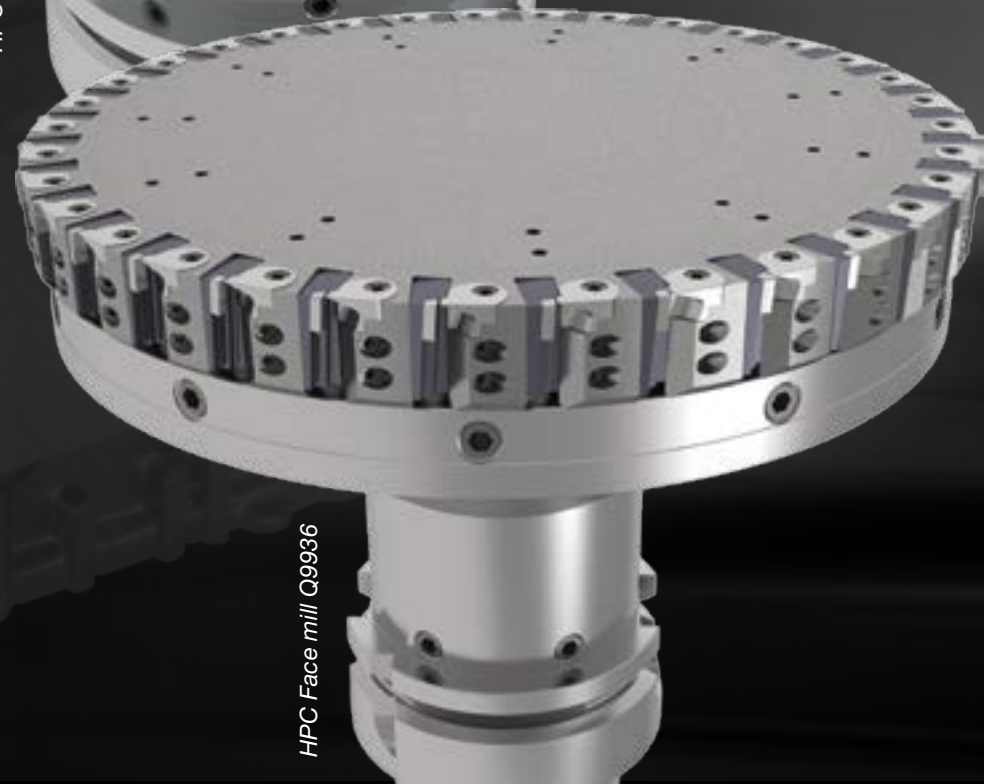


HPC Face mill Q9934

MILLING CUTTERS FOR

FINISH MACHINING

UP TO 2 MM CUTTING DEPTH

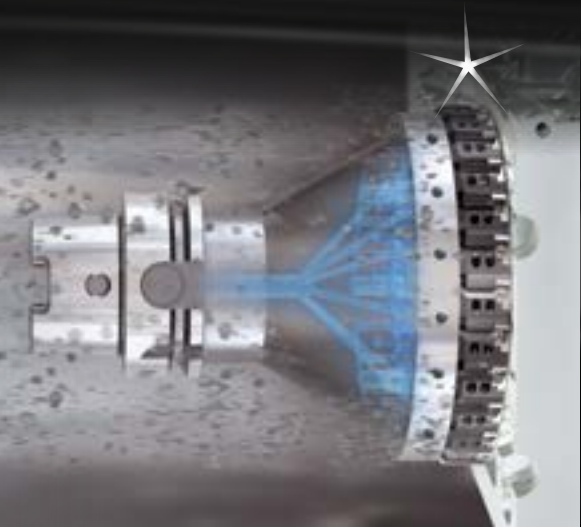


HPC Face mill Q9936



ADVANTAGES

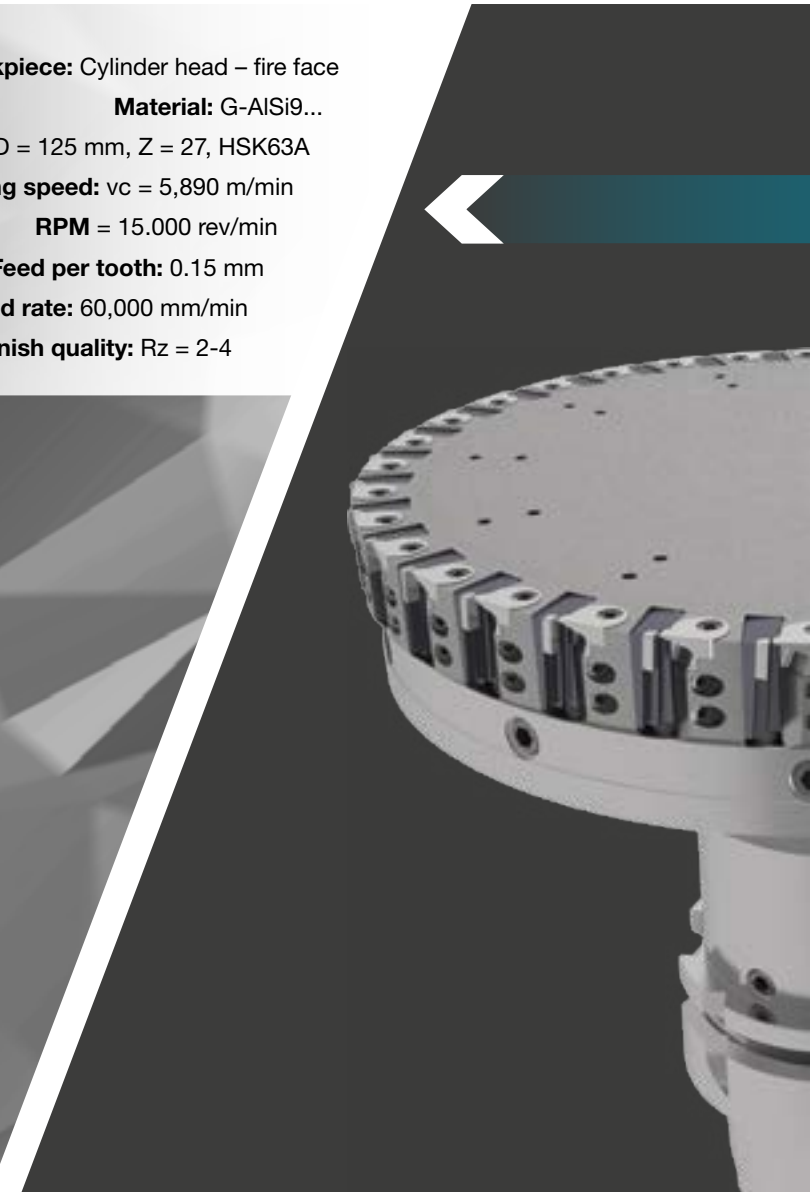
- *ALMOST CHIP-FREE COMPONENTS, LOWER CLEANING COSTS*
- *REDUCED TOOLING COSTS PER COMPONENT*
- *EXTREMELY HIGH FEED RATES (up to 60,000 mm/min)*
- *LOWER MACHINE INVESTMENT FOR NEW PROJECTS*
- *TOOL LIFE IMPROVEMENT BY FACTOR 2 TO 5*
- *HIGH PRODUCTIVITY AND ENERGY EFFICIENCY*



FINISH MACHINING APPLICATION WITH HIGH SURFACE FINISH REQUIREMENTS



Workpiece: Cylinder head – fire face
Material: G-AISI9...
Tool: milling cutter, D = 125 mm, Z = 27, HSK63A
Cutting speed: $v_c = 5,890$ m/min
RPM = 15.000 rev/min
Feed per tooth: 0.15 mm
Feed rate: 60,000 mm/min
Achieved surface finish quality: Rz = 2-4

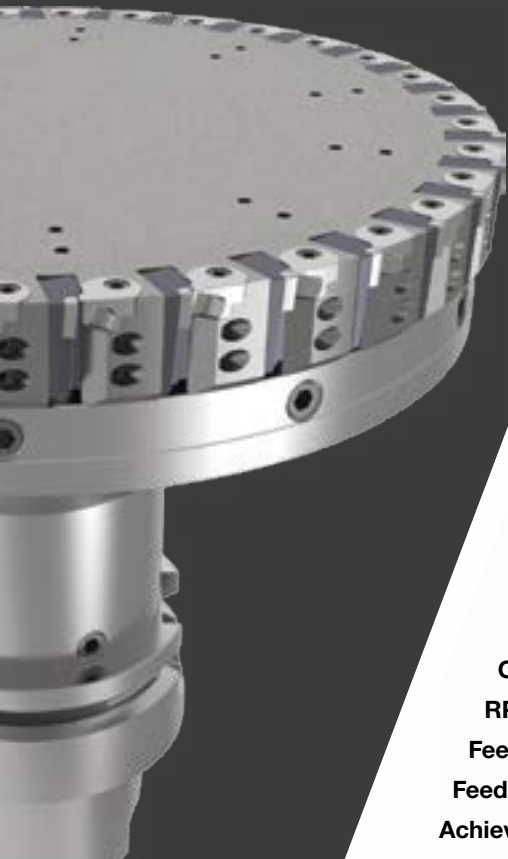


FINISHING APPLICATION WITH DEFINED SURFACE FINISH REQUIREMENT

HPC-MILLING CUTTER

FOR

FINISH MACHINING



Workpiece: Oil sump

Material: GD-AISI8...

Tool: HPC milling cutter, D = 100 mm, Z = 21, HSK63A

Cutting speed: $vc = 2,980$ m/min

RPM = 9,500 rev/min

Feed per tooth: 0.16 mm

Feed rate: 32,000 mm/min

Achieved surface finish quality: $Rz = 15$

ROUGH MACHINING



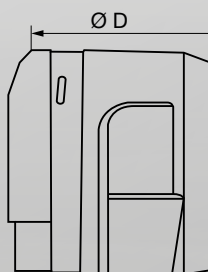
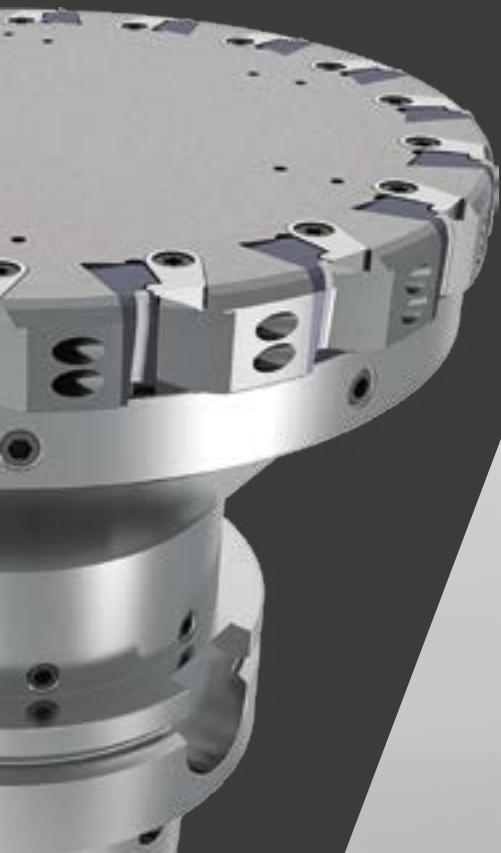
Workpiece: Engine block – end face
Material: G-AISI11...
Tool: HPC milling cutter, D = 80 mm, Z = 9, HSK100A
Cutting speed: $vc = 3,770$ m/min
RPM = 15,000 rev/min
Feed per tooth: 0.22 mm
Feed rate: 29,700 mm/min
Cutting depth: 6 mm
Achieved surface finish quality: Rz = 10-12



HPC-MILLING CUTTER

FOR

ROUGH MACHINING 



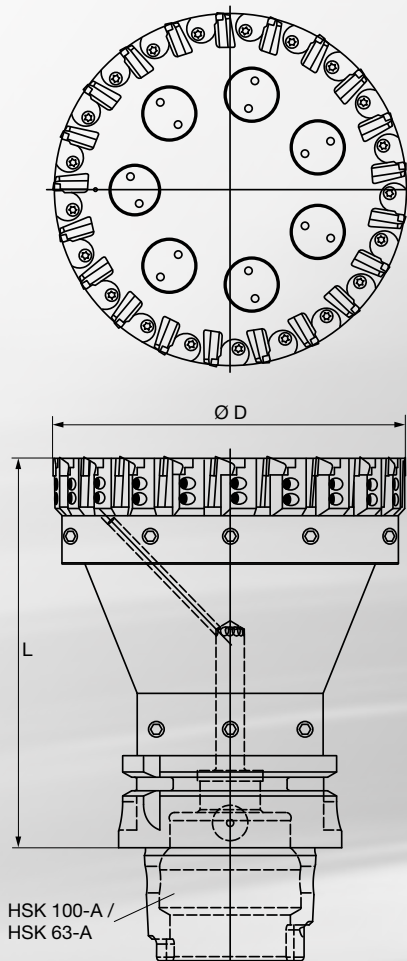
Rough milling cutter Q9934 – with HSK 63 form A

diameter/mm	cutting edges	L/mm	max. rev/min	shank	drawing no.	prod. no./code
63	6	100	32,000	HSK 63-A	Q 9934-6300 1063 R	20005 63,000
80	9	110	31,000	HSK 63-A	Q 9934-8000 1163 R	20005 80,000
100	12	110	28,000	HSK 63-A	Q 9934-1000 1163 R	20005 100,000
125	15	123	24,000	HSK 63-A	Q 9934-1250 1263 R	20005 125,000
160	18	123	20,000	HSK 63-A	Q 9934-1600 1263 R	20005 160,000

Rough milling cutter Q9934 – with HSK 100 form A

diameter/mm	cutting edges	L/mm	max. rev/min	shank	drawing no.	prod. no./code
63	6	100	32,000	HSK100-A	Q 9934-6300 1010 R	20005 63,001
80	9	110	31,000	HSK100-A	Q 9934-8000 1110 R	20005 80,001
100	12	110	28,000	HSK100-A	Q 9934-1000 1110 R	20005 100,001
125	15	123	24,000	HSK100-A	Q 9934-1250 1210 R	20005 125,001
160	18	123	20,000	HSK100-A	Q 9934-1600 1210 R	20005 160,001

HPC-MILLING CUTTERS FOR FINISH MACHINING



Standard range Q9936 – with HSK 63 form A

for maximum feed rates

diameter/mm	cutting edges	L/mm	max. rev/min	shank	drawing no.	prod. no./code
50	9	100	32,000	HSK 63-A	Q 9936-5000 1063 R	20004 50,101
63	12	100	31,000	HSK 63-A	Q 9936-6300 1063 R	20004 63,101
80	15	110	28,000	HSK 63-A	Q 9936-8000 1163 R	20004 80,101
100	21	110	24,000	HSK 63-A	Q 9936-1000 1163 R	20004 100,101
125	27	123	20,000	HSK 63-A	Q 9936-1250 1263 R	20004 125,101
160	33	123	15,000	HSK 63-A	Q 9936-1600 1263 R	20004 160,101

Standard range Q9936 – with HSK 100 form A

for maximum feed rates

diameter/mm	cutting edges	L/mm	max. rev/min	shank	drawing no.	prod. no./code
50	9	100	32,000	HSK 100-A	Q 9936-5000 1010 R	20004 50,103
63	12	100	31,000	HSK 100-A	Q 9936-6300 1010 R	20004 63,103
80	15	110	28,000	HSK 100-A	Q 9936-8000 1110 R	20004 80,103
100	21	110	24,000	HSK 100-A	Q 9936-1000 1110 R	20004 100,103
125	27	123	20,000	HSK 100-A	Q 9936-1250 1210 R	20004 125,103
160	33	123	15,000	HSK 100-A	Q 9936-1600 1210 R	20004 160,103

HPC-MILLING CUTTERS FOR FINISH MACHINING

Standard range Q9933 – with HSK 63 form A

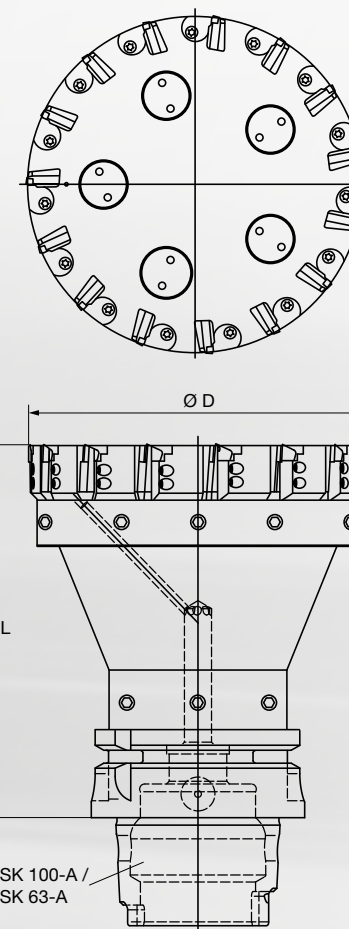
for lower spindle power (reduced number of teeth)

diameter/mm	cutting edges	L/mm	max. rev/min	shank	drawing no.	prod. no./code
63	9	100	31,000	HSK 63-A	Q 9933-6300 1063 R	20004 63,106
80	12	110	28,000	HSK 63-A	Q 9933-8000 1163 R	20004 80,106
100	15	110	24,000	HSK 63-A	Q 9933-1000 1163 R	20004 100,106
125	18	123	20,000	HSK 63-A	Q 9933-1250 1263 R	20004 125,106
160	24	123	15,000	HSK 63-A	Q 9933-1600 1263 R	20004 160,106

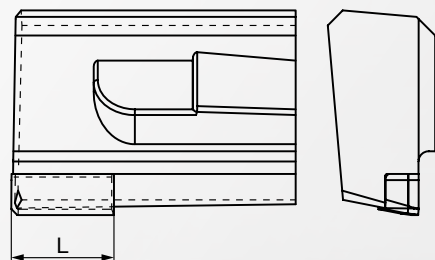
Standard range Q9933 – with HSK 100 form A

for lower spindle power (reduced number of teeth)

diameter/mm	cutting edges	L/mm	max. rev/min	shank	drawing no.	prod. no./code
63	9	100	31,000	HSK 100-A	Q 9933-6300 1010 R	20004 63,108
80	12	110	28,000	HSK 100-A	Q 9933-8000 1110 R	20004 80,108
100	15	110	24,000	HSK 100-A	Q 9933-1000 1110 R	20004 100,108
125	18	123	20,000	HSK 100-A	Q 9933-1250 1210 R	20004 125,108
160	24	123	15,000	HSK 100-A	Q 9933-1600 1210 R	20004 160,108



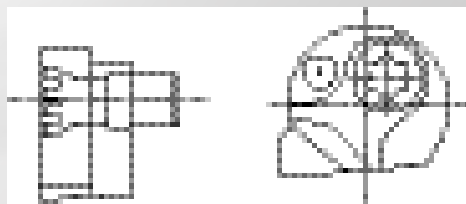
PCD INSERTS AND SPARE PARTS FOR FINISH MILLING CUTTERS



PCD inserts for HPC-Finishing cutters

code	drawing no.	Rz	cutting edge length, L	prod. no.	prod. no.
				20371	20374
				tool material	tool material
				for good surface finish	
99,300	W9930-03200445R	2-10	5	PCD	PCD30
				for defined surface finish	
99,320	W9931-10000445R	10-25	5	PCD	PCD30
				wiper insert (to be used in combination with code no. 99,200 or 99,320)	
99,330	W9930-10000445R		5	PCD	PCD30

Chip guiding elements (including clamp screw), CGE set



prod. no.		
20071		
code	drawing no.	milling cutter diameter/mm
50,101	E5000 9936	50-57,99
63,101	E6300 9936	58-69,99
80,101	E8000 9936	70-89,99
100,101	E1000 9936	90-124,99
125,101	E1250 9936	125-250

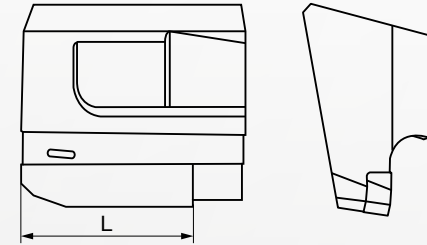
Spare parts

clamping screw		adjustment screw	
prod. no.	drawing no.	prod. no.	drawing no.
302308411	E5538	333045922	E5785-1

PCD-INSERT AND SPARE PARTS FOR ROUGH MILLING CUTTERS

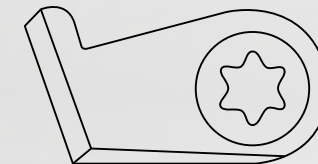
PCD inserts for HPC-Rough milling cutters

prod. no.					
20375					
code	drawing no.	R	F	tool material	
99,340	W9934-03300410R	--	20°/45°	PCD30	
99,341	W9934-08300470R	0,8	20°	PCD30	



Chip guiding element (including clamp screw), CGE set

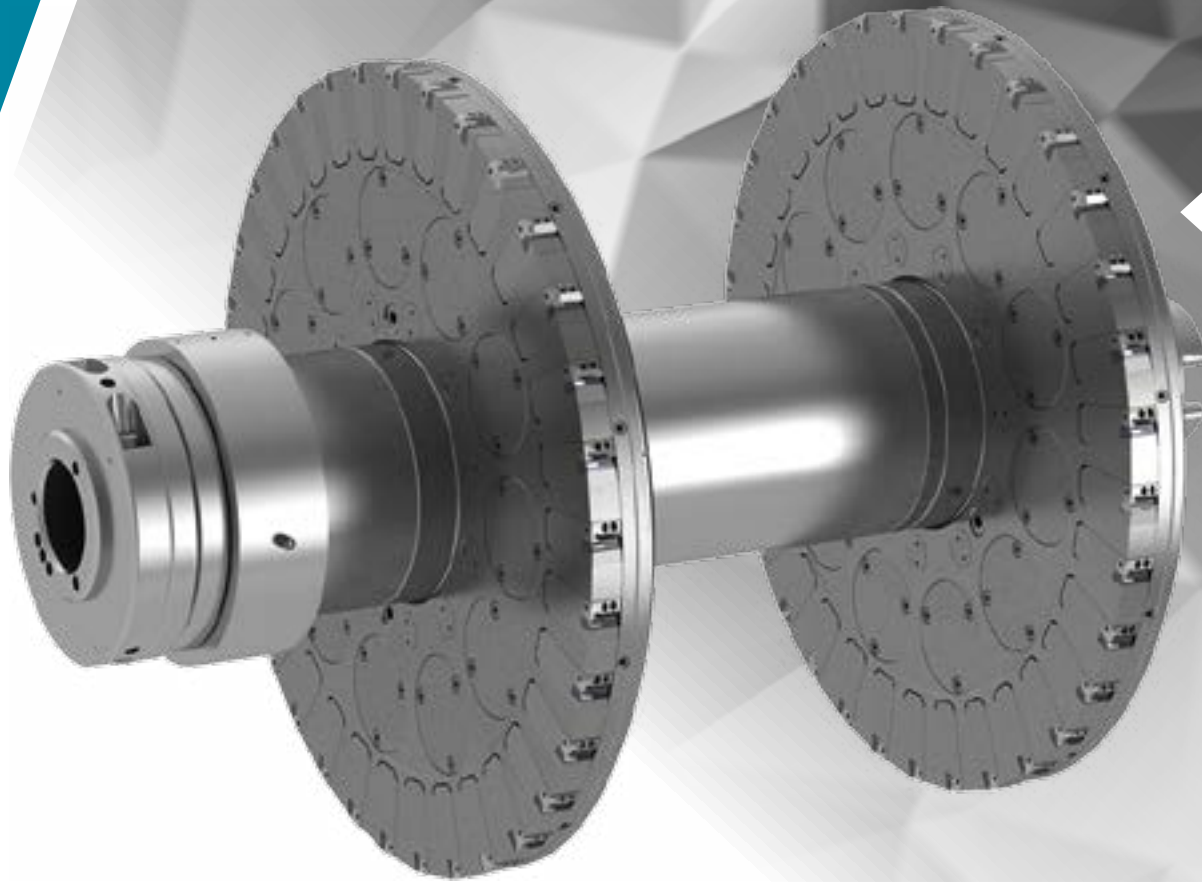
prod. no.			
20075			
code	drawing no.	milling cutter diameter/mm	
63,000	E63009934	63-160	



Spare parts

clamping screw		adjustment screw	
prod. no.	drawing no.	prod. no.	drawing no.
333053343	E333053343	333045922	E5785-1

HPC FACE MILLS CUSTOMIZED SOLUTIONS



HPC-GANG MILLING CUTTER

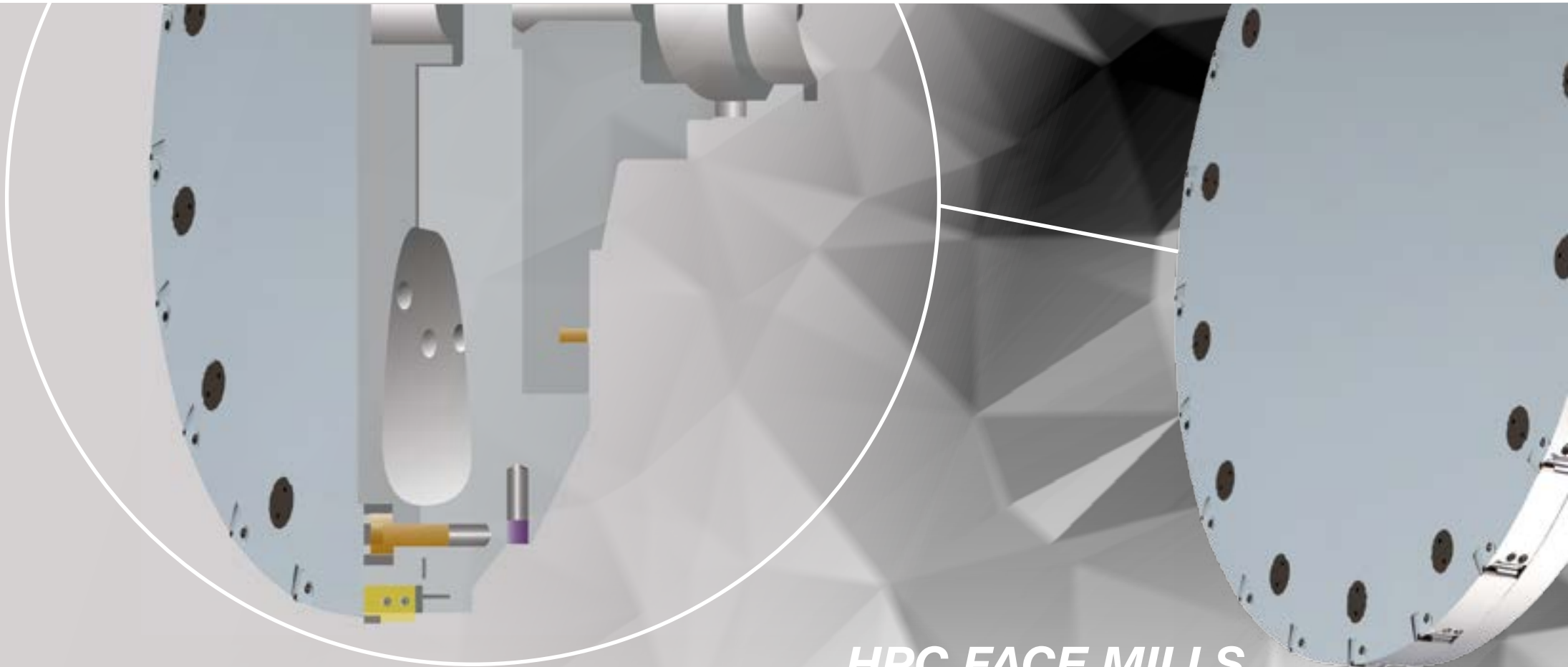
DIAMETER 380mm, z= 2x33

BAR CUTTER

for limited space in tool magazine

DIAMETER 226mm, z= 2x2, HSK 63-A

HPC FACE MILLS CUSTOMIZED SOLUTIONS



HPC FACE MILLS

REDUCED WEIGHT

Version with aluminium intermediate plate

DIAMETER 315mm, z= 21, HSK 80-C, WEIGHT: 18KG

HPC FACE MILLS CUSTOMIZED SOLUTIONS

HPC FACE MILLS FOR MQL

2 channel MQL with integrated MQL distributor

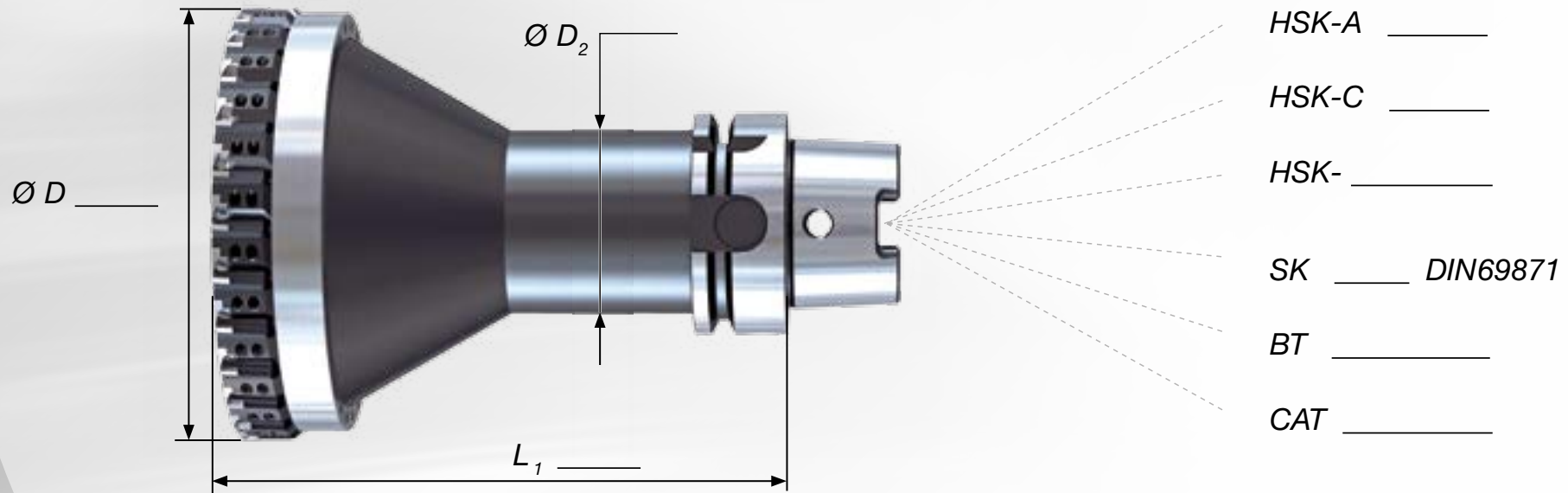
DIAMETER 250mm, z= 24



ENQUIRY FORM

Please complete the enquiry form and fax to: +49 (0) 911 / 64 19 22-10
 scan and send e-mail to info@hollfelder-guehring.de
 An online enquiry can be found at www.hollfelder-guehring.de

_____ <input type="checkbox"/>	_____
Company name/No. if available	new customer
_____	_____
Address	Town/post code
_____	_____
Telephone	e-mail address
_____	_____
Date	Signature



Workpiece _____	Width of cut (ae) _____	Maximum no. of teeth <input type="radio"/>	Rough milling cutter <input type="radio"/>
Material _____	IC (bar) _____	Reduced no. of teeth _____	Finish milling cutter <input type="radio"/>
Allowance (ap) _____	MQL 1 channel <input type="radio"/>	Maximum tool weight _____	
Surface finish (Rz) _____	MQL 2 channel <input type="radio"/>		

BASIC PRESETTING INSTRUCTIONS FOR HPC-MILLING CUTTERS

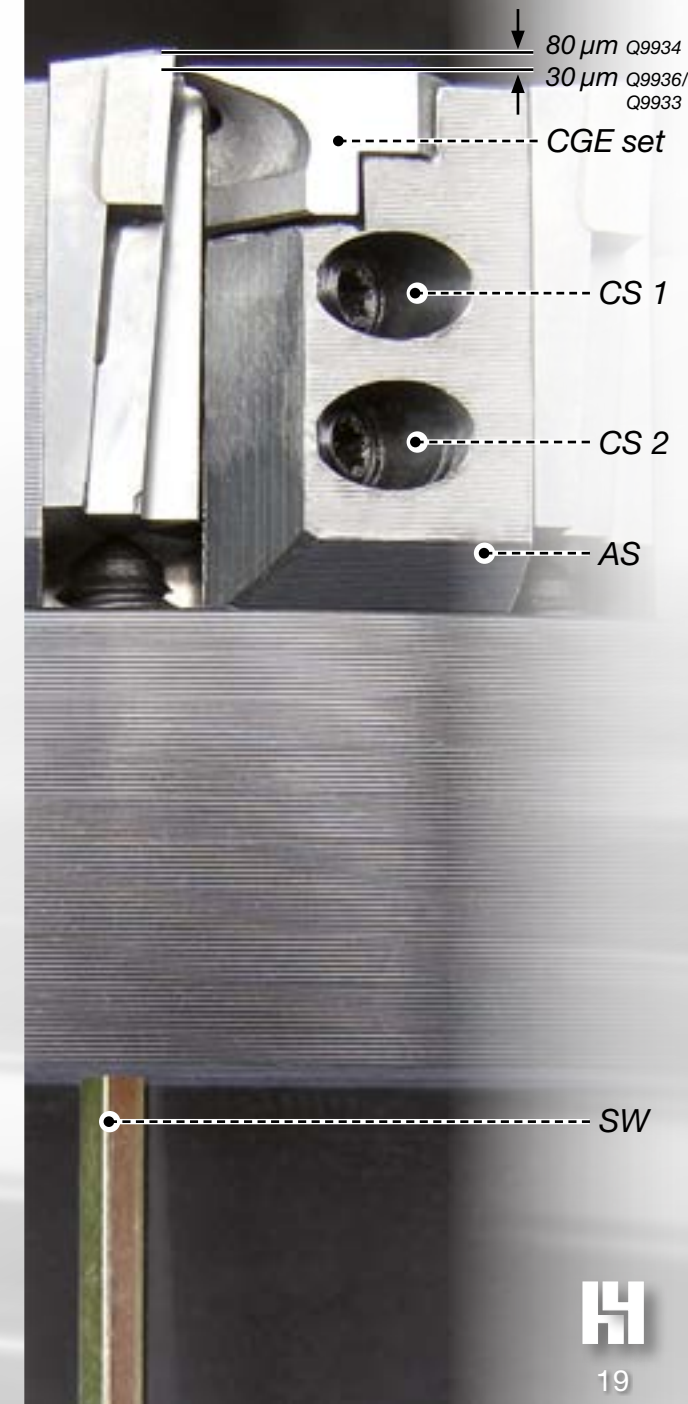


- ① Determine the highest chip guiding element, for this run a dial test indicator (DTI) over the milling cutter. Recommendation: Place milling cutter in a setting fixture and rotate under the DTI and measure the individual chip guiding elements
- ② Install the inserts and tighten the clamping screw (CS 1). Do not tighten the clamping screw (CS 2)!
- ③ Adjust the inserts in the axial direction with the adjustment screw (AS) to 10 μm below the final setting dimension.
The difference between the inserts should be max. 2 μm .
 - Setting dimension = chip guiding element height + 30 μm at Q 9936
 - Setting dimension = chip guiding element height + 80 μm at Q 9934
- ④ Firmly tighten the clamping screw (CS 2) to perfectly align the insert then loosen again and re-tighten to 15 Ncm.
- ⑤ Tighten the clamping screw (CS 1) with the required torque.
- ⑥ Adjust all inserts to the setting dimension.
The difference between the inserts should be max. 1 μm .
Tighten the clamping screw (CS 2) with the required torque.

The required torque, please refer from the adjustment instructions.

Safety note: In the event of damage the tool must be returned to the manufacturer for checking for technical safety reasons!
Only original replacement parts must be used!

Further information can be found at
www.hollfelder-guehring.de





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