

The new milling cutters for machining aluminium FP 85



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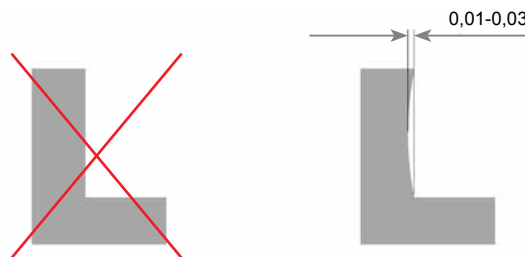
1.) Capacity criteria and performance

- shorter machining process through high cutting parameters
- long tool life through optimum selection of cutting material, coating and cutting edge geometry
- also qualified for low-performing machines
- high working precision through low manufacturing tolerances and ground inserts
- expedient layout of number of teeth
- brilliant application characteristics: extremely mild cutting manner
excellent running smoothness
very good surfaces

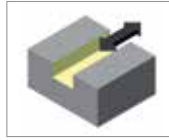
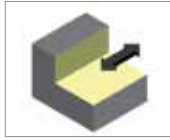
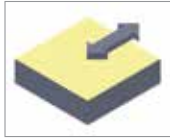
High-performance face mill as well as 90° step mill for machining aluminium and plastics as a shell type as well as a shank type cassette mill or as a shell type mill in diameters starting with 40mm up to 125mm depending on the tool type.

- Tool holder for cassette tools up to Ø 50mm made to DIN 1835-B, for shell type mills starting with Ø 63mm made to DIN 8030-A
- all tools are supplied with internal coolant passages
- cassette tools with fine adjustments for end running
- basic bodies of cassette tools starting with Ø 63mm and up to Ø 125 mm are made of high-strength aluminium
- very positive axial as well as radial cutting geometry
- ground inserts with edge radius of 0,3mm and wiper geometry
- tools should be preferably used with pre-balanced tool holders
- balance test results for all tools: shank type milling cutter G6,3 of 18 000 $\frac{1}{\text{min}}$
shell type milling cutter G6,3 of 20 000 $\frac{1}{\text{min}}$

Attention: contour defect while step milling



2.) Cassette holders with cassettes K90-85



ALU

SS4,0-1 fixing screw
to fix an insert
(tightening torque 3,2 Nm)

Insert FP85

Cassette K90-85-G

KS-5 x 10
tightening screw for cassette
(tightening torque 4,0 Nm)

Cassette holder
TK-...-B

VS-5 Adjusting screw to
adjust the end running

Cassette holder
TKA-...-B

SS4,0-1 fixing screw
to fix an insert
(tightening torque 3,2 Nm)

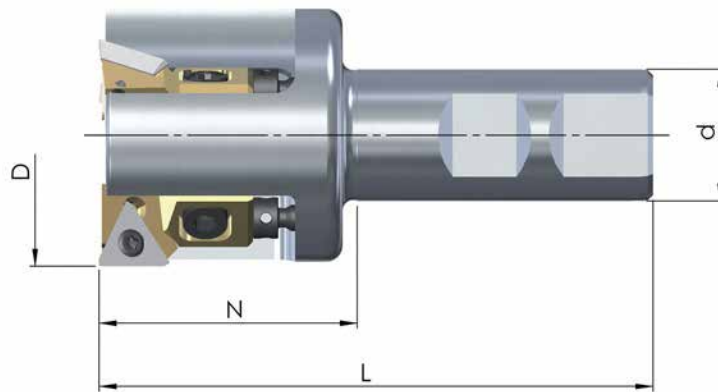
Insert FP85

Cassette K90-85-G

VS-5 Adjusting screw to
adjust the end running

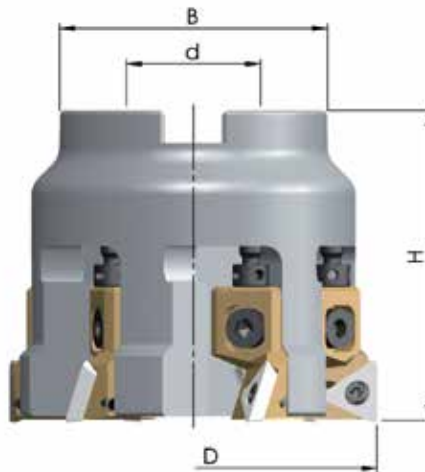
KS-5 x 14
tightening screw for cassette
(tightening torque 4,0 Nm)

2.1) Technical data: Cassette holder -Weldon shank mill-



Order-No.	D	L	d _{h6}	N	Z
TK-40-02-B	40	105,5	25	48	2
TK-50-03-B	50	105,5	25	48	3

2.2) Technical data: Cassette holder -Shell type mill-



Order-No.	D	H	d	B	Z	MS
TKA-063-85-4-AL-B	63	67,3	22	46	4	MS-10x50-912
TKA-080-85-6-AL-B	80	68,4	27	54	6	MS-12x50-912
TKA-100-85-8-AL-B	100	68,0	32	70	8	MS-16x45-912
TKA-125-85-9-AL-B	125	68,0	40	88	9	MS-20x55-7991

MS= Central screw

Cassette holders are delivered equipped with accordant cassettes.

2.3) Technical data: Cassette

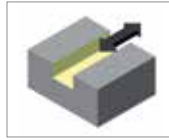
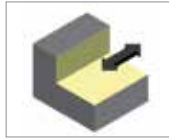
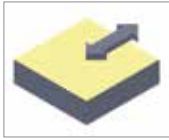


Order-No.	
K90-85-G	Hard wearing TiN-coating

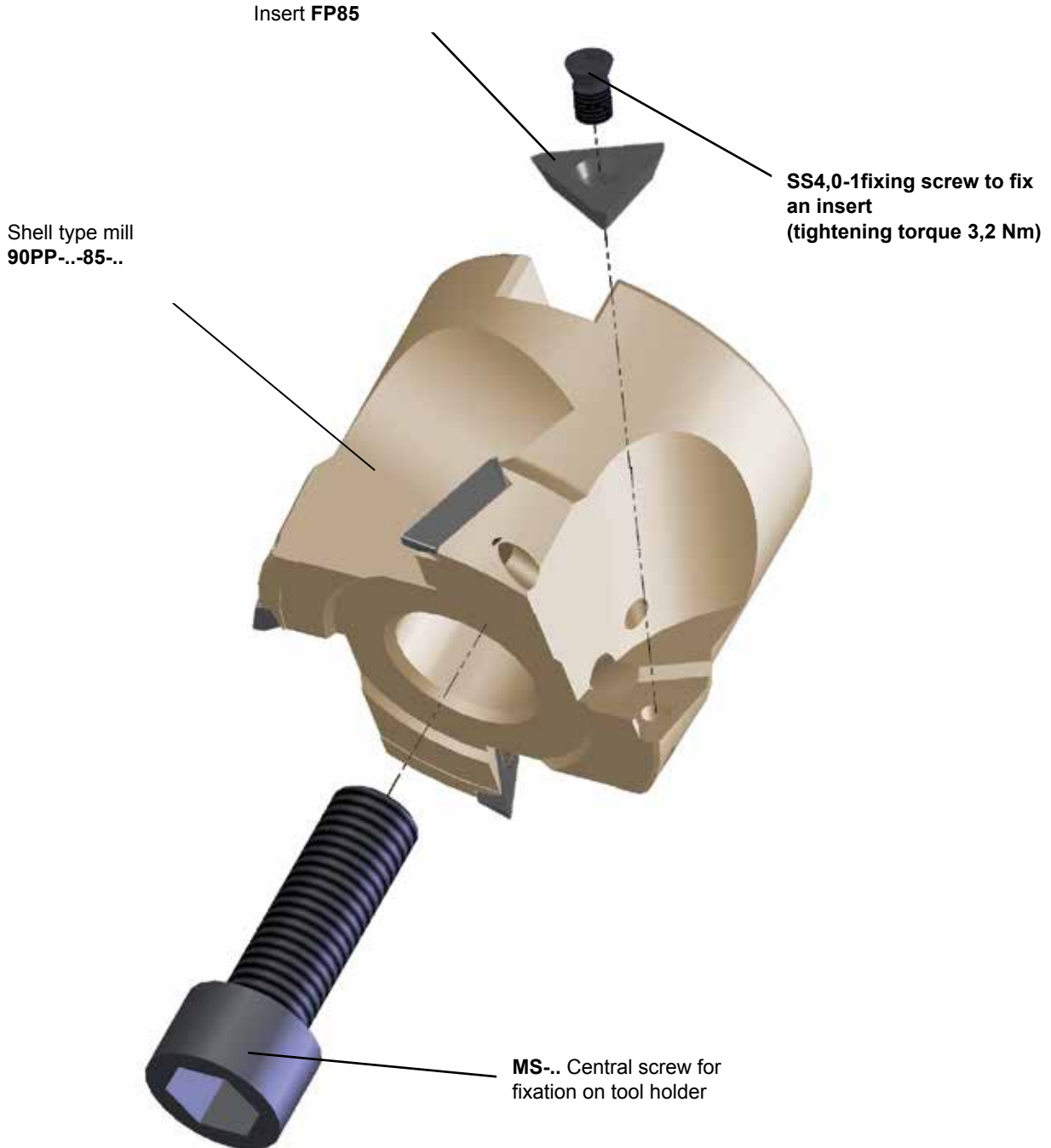
2.4) Spare parts: Cassette holders and Cassettes

	KS-5x10	Cassette screw for TK (tightening torque 4,0 Nm)		VS-5	Adjusting screw
	KS-5x14	Cassette screw for TK (tightening torque 4,0 Nm)		SW-4	Allen T-key
	SS 4,0-1	Fixing screw (tightening torque 3,2 Nm)		T 15	Screwdriver
	100g	Heavy duty grease			

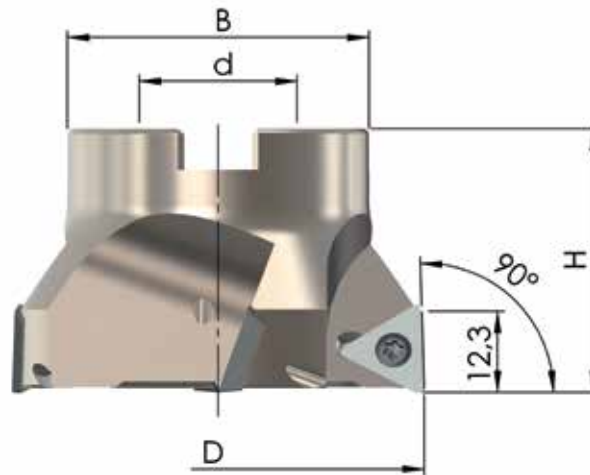
3.) Shell type mills



ALU






3.1) Technical data: Shell type mills






Order-No.	D	H	d ^{H6}	B	Z	MS
90PP-040-85-3	40	40	16	38	3	MS-8x30-912-S
90PP-050-85-4	50	40	22	46	4	MS-10x30-912
90PP-063-85-4	63	40	22	46	4	MS-10x30-912
90PP-080-85-5	80	40	27	60	5	MS-12x25-912

MS= Central screw

3.2) Spareparts: Shell type mills

	SS 4,0-1	Fixing screw (tightening torque 3,2 Nm)		T 15	Screwdriver
	100g	Heavy duty grease			

4.) Tungsten carbide inserts and application areas

 IK=14,7 x 3,4 R 0,3	FP 85 AL10 (B16)	Ground periphery, supporting and cutting surfaces ground <u>Quality:</u> Highly wear resistant carbide type with TiAlN coating for machining aluminium up to approx. 8% Si. The coating increases wear resistance and reduces cutting edge build-up. Packed in boxes of: 20 pieces
 IK=14,7 x 3,4 R 0,3	FP 85 K15M (B16)	Ground periphery, supporting and cutting surfaces ground <u>Quality:</u> Very hard wearing carbide type for machining aluminium up to approx. 8% Si, and all non-ferrous metals and plastics. Packed in boxes of: 20 pieces
 IK=14,7 x 3,4 R 0,3	FP 85 KD16 (B16)	Ground periphery, supporting and cutting surfaces ground <u>Quality:</u> Very hard wearing carbide type with special diamond coating for machining aluminium, GFC, CFC Packed in boxes of: 20 pieces

PCD – inserts available on request!

5.) Instruction for use and cutting data recommendations

Roughing:

Depth of cut a_p : up to 10mm (depending on a_e)

Example: $a_p=3\text{mm}$, $a_e=\text{total measure}$, $v_c=1200\text{m/min}$, $f_z=0,5\text{mm}$

Finishing:

Example: $a_p=0,3\text{mm}$, $a_e=40\text{mm}$, $v_c=1200\text{m/min}$, $f_z=0,05\text{mm}$ result: $R_z=10\mu\text{m}$

Example: $a_p=0,3\text{mm}$, $a_e=40\text{mm}$, $v_c=1200\text{m/min}$, $f_z=0,03\text{mm}$ result: $R_z=4\mu\text{m}$

Cutting Speed and Feed Rate:

Material	Remarks	V_c (m/min)	F_z (mm)
Aluminium	untreated	up to 3000	up to 0,5
Aluminium	forged, alloyed	1400-1600	up to 0,5
Aluminium < 12% Si	untreated	up to 3000	up to 0,5
Aluminium	forged, alloyed	up to 2000	up to 0,5
Aluminium > 12% Si	very heat resistant	up to 1200	up to 0,5
Copper alloys > 1% Pb	well-machinable	up to 1200	up to 0,5
CuZn-alloys, Yellow brass		up to 1200	up to 0,5
Electrolytic copper		up to 1200	up to 0,5
Thermosetting plastics, Fiber materials		up to 1000	up to 0,5