FACE MILLING

FP 558

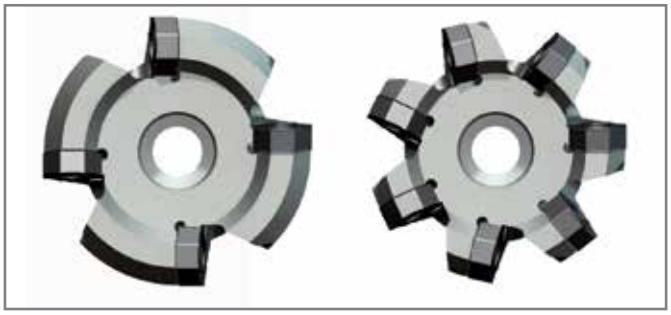
Jongen Werkzeugtechnik GmbH & Co. KG

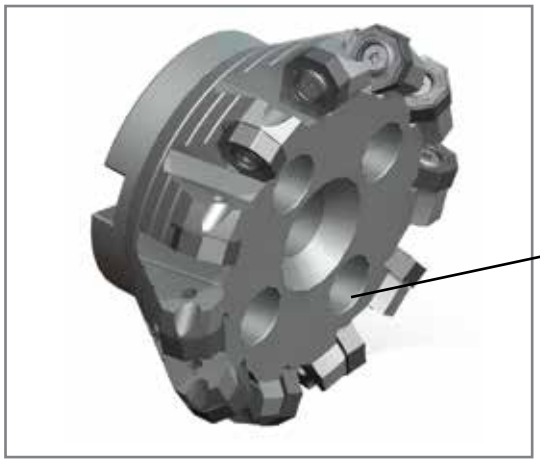
THE TOOL

- ☞ Especially efficient face milling cutter, for the roughing machining
- ☞ Axial depth of cut max. 5 mm, with 16 effective cutting edges
- ☞ Tools are made of tempered and solid 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

- ☞ Face milling – Roughing tool, designed for steel and cast iron processing
- ☞ Special features of this new face milling generation are the high number of teeth and the soft cutting manner, thanks to the effectively positive rake angle.
- ☞ Different versions of number of teeth allow an optimal choice for the required machining processes.





- ☞ Holders are made to DIN 8030, from Ø 125 the tools are equipped with supplementary boreholes for face mill arbors.

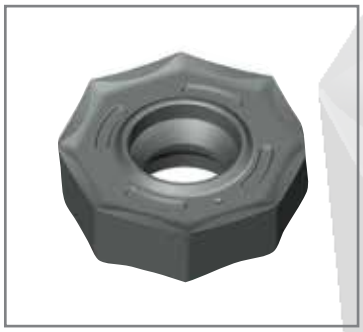
Supplementary boreholes

- ☞ Face mills from Ø 50 – 100 include internal coolant passages

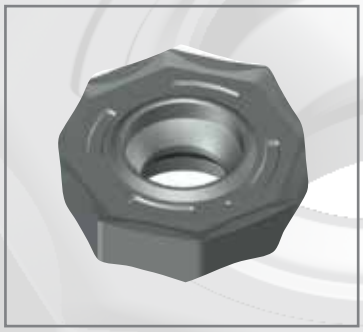
Internal coolant passage

THE INSERT

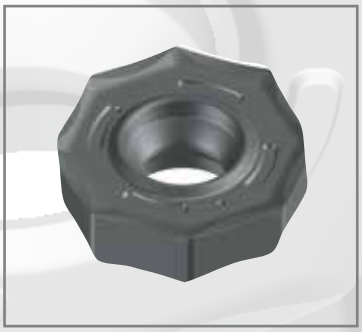
☞ Precision sintered or precision ground insert, with 16 effective cutting edges, highly positive chip breaker, axial depth of cut max. 5 mm



FP 558



FP 458



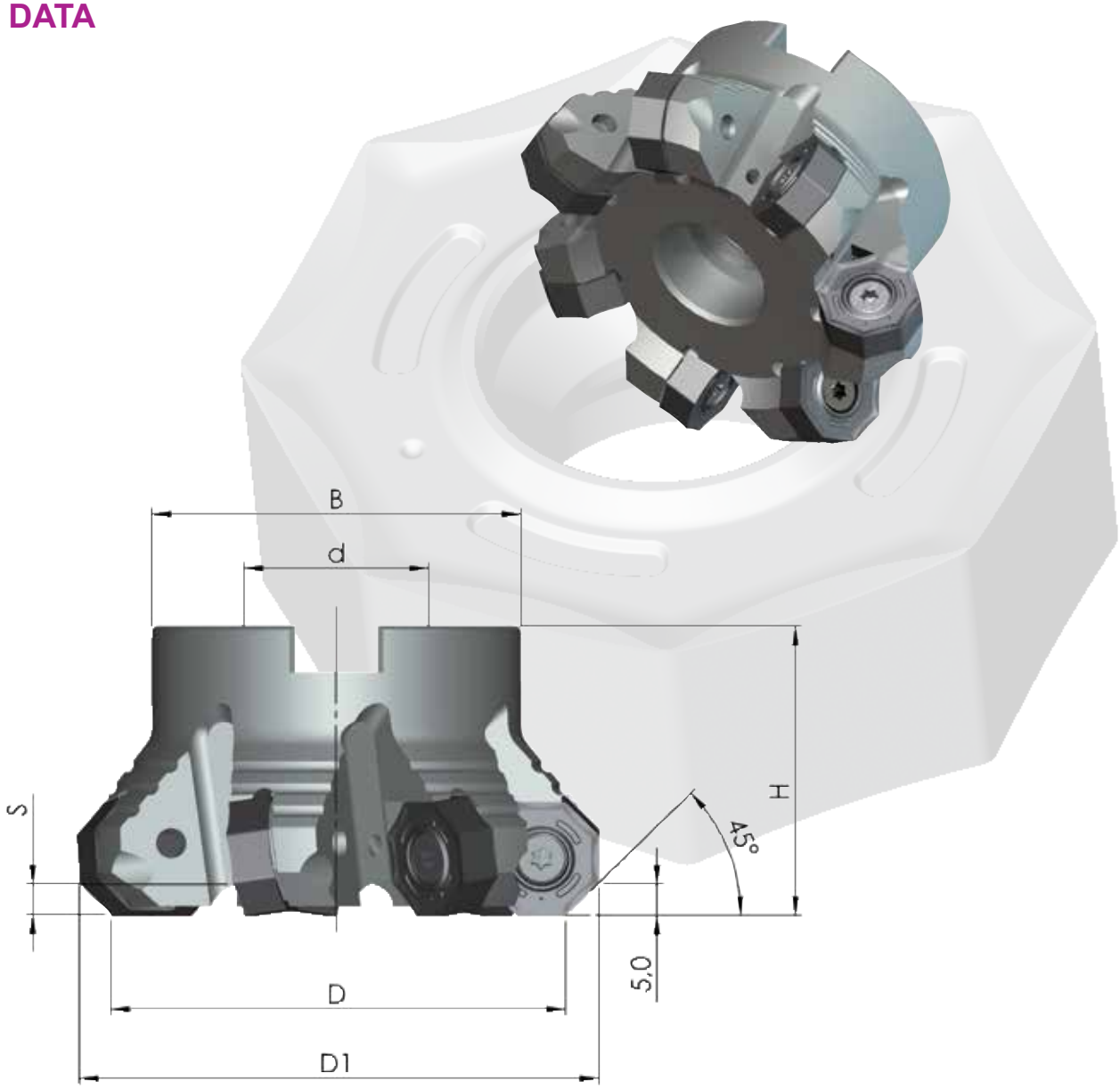
FP 858

☞ Application areas: All kind of steels and cast iron materials

Following carbide qualities are offered:

HT45	**Code 31** **P30 - P35**	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, heat-treatable steel as well as unalloyed steel, low alloyed steel, high alloyed steel and also grey cast iron, globular graphite cast iron etc.
HT50®	**Code 22** **P30 - P35**	Very tough fine grain carbide quality with a TiAlN-coating for middle to 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 and cast iron materials, e.g. structural steel, tool steel, heat-treatable 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** **M20 - M30**	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** **K15 - K20**	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
KT28	**Code 23** **K15 - K20**	Very hard wearing fine grain carbide with a TiAlN-coating for middle to 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 cast iron materials such as: grey-, tempered-, vermicular-, graphite- and globular graphite cast iron.

TECHNICAL DATA



Order-Nr.	D	D_1	H	d	B	S	Z
45PP-050-558-4	50	62,8	50	22	46	3,5	4
45PP-063-558-5	63	75,8	50	27	58	6,0	5
45PP-080-558-6	80	92,8	50	32	78	6,0	6
45PP-100-558-7	100	112,8	50	32	78	1,5	7
45PP-125-558-9	125	137,8	63	40	90	5,5	9
45PP-160-558-11	160	172,8	63	40	90	5,5	11
Close teeth pitch							
45PP-080-558-7	80	92,8	50	32	78	6,0	7
45PP-100-558-9	100	112,8	50	32	78	1,5	9
45PP-125-558-11	125	137,8	63	40	90	5,5	11
45PP-160-558-13	160	172,8	63	40	90	5,5	13

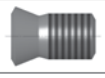
Inserts

		HT45 (code 31)	HT50 (code 22)	HT32 (code 33)	HT20 (code 32)	KT28 (code 23)		
 **FP 558** (A14) IK=ø20 x 7,64	~							
	f_z [mm]	0,25 (0,20-0,50)	0,25 (0,20-0,50)			0,25 (0,20-0,50)		
 **FP 458** (A14) IK=ø20 x 7,64	~							
	f_z [mm]	0,25 (0,20-0,50)		0,25 (0,20-0,50)	0,25 (0,20-0,50)			
 **FP 858** (A14) IK=ø20 x 7,64	▼▼▼							
	f_z [mm]	0,25 (0,20-0,50)		0,25 (0,20-0,50)	0,25 (0,20-0,50)			
	VPE	10	10	10	10	10		

v_c [m/min]	steel	stainless	cast iron	non-ferrous metals	highly heat-resistant	tempered
HT45	250 (200 - 350)	240 (140 - 300)	240 (130 - 280)			
HT50	220 (160 - 300)	200 (100 - 300)	260 (200 - 300)			
HT32	250 (200 - 350)	240 (140 - 300)			60 (40 - 200)	
HT20			260 (180 - 350)			80 (40 - 120)
KT28			260 (180 - 350)			80 (40 - 120)

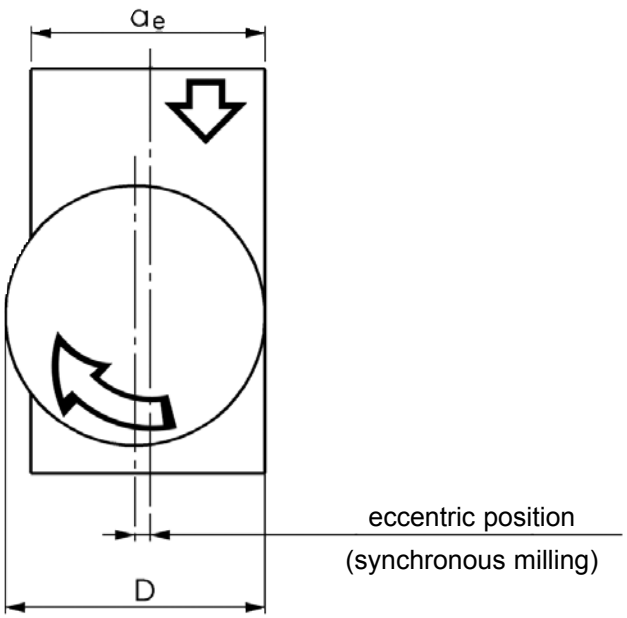
The above mentioned data are standard values.
Up and down corrections are admitted depending on the machine type, tool and holding fixture.

Spare Parts

	**SS 6,0-1**	Tightening torque **5,6-5,8 Nm**	**Fixing screw**
	**T 25**		**Screw driver**
	**FETT**		**Heavy duty grease**

ELECTION OF THE CORRECT TOOL

Optimal choice of tool diameter:



Calculation example:

a_e = 50 mm

D = 50 x 1,2 = 60

→ Here the correct tool diam. would be 63 mm.

a_e = radial depth of cut
D = tool diameter

Optimal choice of a tool type:

Regular pitch:

universal milling and application

Close pitch:

maximal number of teeth for high capacity under steady conditions

FURTHER TECHNICAL INFORMATION

Calculation of rotation number of main spindle:

$$n = \frac{1000 \cdot v_c}{D \cdot \pi} \quad [min^{-1}]$$

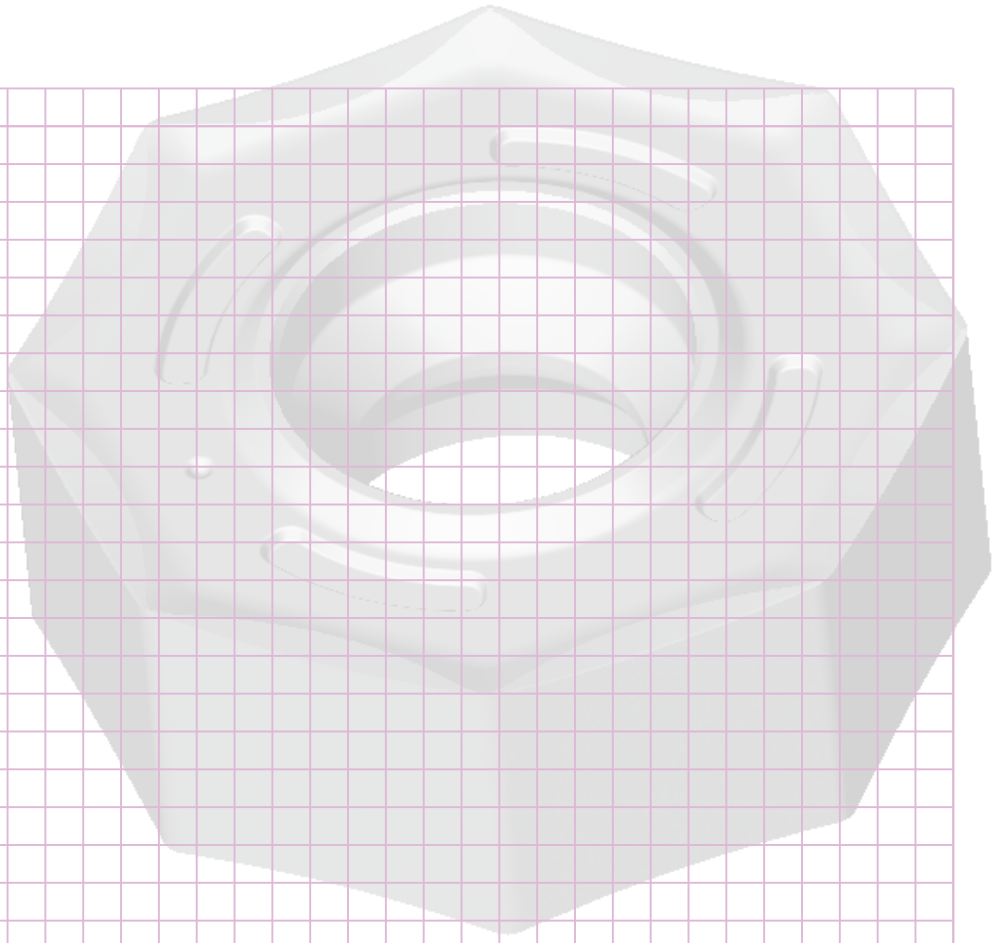
n = *Rotation number (min^{-1})*
V_c = *Cutting speed (m/min)*
D = *Diameter of a tool (mm)*

Calculation of feed velocity:

$$v_f = f_z \cdot Z \cdot n \quad [mm/min]$$

V_f = *Total feed (mm/min)*
f_z = *Feed rate per tooth (mm)*
Z = *Number of teeth*
n = *Rotation number (min^{-1})*

NOTES



Jongen Werkzeugtechnik GmbH & Co. KG

Siemensring 11 · 47877 Willich · Germany
Phone: +49 2154 / 95 330 350 · Fax: +49 2154 / 95 330 500
www.jongen.de · email: info@jongen.de

E & OE