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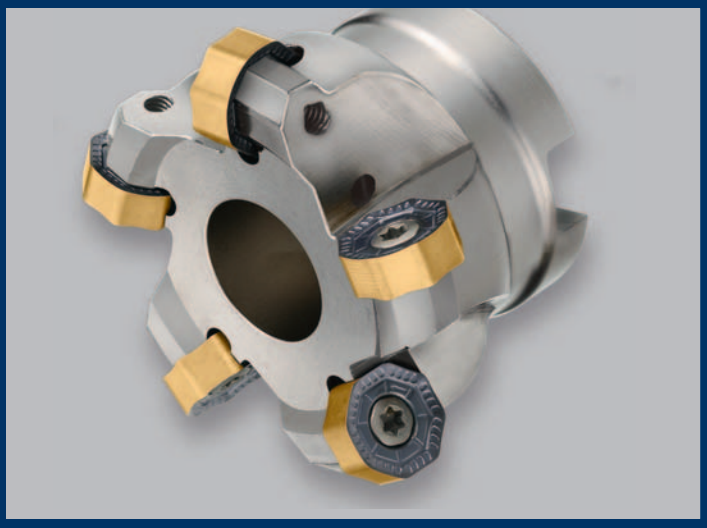
MultiEdge Double 8 Face Milling Cutter



Insert with 16 Cutting Edges

www.lmt-tools.com

MultiEdge Double 8 Face Milling Cutter

Shorter manufacturing times mean that the tools used must be both very precise and reliable. Conventional tools are not always up to this challenge. Fette recognized this trend long ago, and has therefore pressed forward with the development of high-performance indexable milling cutters and inserts that satisfy the demands of all modern manufacturing techniques.

The **MultiEdge Double 8** is just such a tool, ideal for economically machining steel and cast-iron materials. Inserts can be used on both sides, having a total of 16 cutting edges. In spite of low axial depths of cut of no more than .118" for ONGU 0505 inserts and .157" for ONGU 0606 inserts, the cutting edges permit significantly increased feed rates, so making a large contribution to increased productivity.

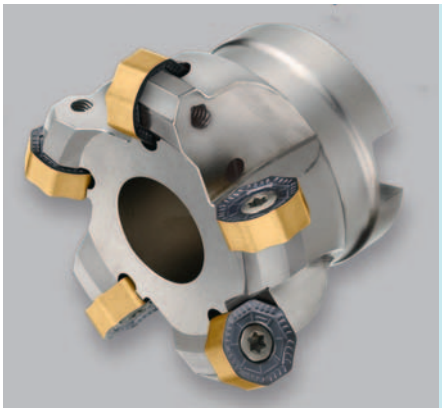
Because of the lower axial forces, even the machined surfaces produced when roughing are extremely flat, with a low surface roughness (Rz < 15 µm).

This outstanding performance is also used for finishing: the **MultiEdge Double 8** indexable inserts have been given an innovative broad-finishing geometry. Although this does halve the number of usable cutting edges, the high feed rates can nevertheless still be achieved, while maintaining a finishing quality of Rz well below 10 µm.

A universal face milling cutter has been developed specifically for the **MultiEdge Double 8**, for machining steel, as well as cast iron. The indexable inserts are available in grades LC225T, LC240T and LC610T, and in two insert sizes – ONGU 0505 and ONGU 0606. The cutter diameters start at 2.00", and extend in the fixed pocket version up to 6.00". Multi Mills give flexibility up to 12.00" dia. – other dimensions are possible by request.

Features
- Indexable insert with 16 cutting edges (eight cutting edges on each side)
- Large feed rates are possible
- Carbide grades LC225T, LC240T, LC610T
- Cutter available in fixed pocket version from 2.00" to 6.00" dia.
- Multi-Mill style available from 4.00" to 12.00" dia.

Advantages
- Indexable inserts can be used both for roughing and finishing
- High profitability from the large number of cutting edges (16x)
- High feed rates are possible



The MultiEdge Double 8 was used in replacement of a 45° face milling cutter with inserts having 8 cutting edges, for face milling a guide joint made out of GJS-600. At a speed rate of 590 sfm, tool life could be inreased by 25%. Because of 16-times indexable inserts ONGU0606, the total number of inserts needed was reduced by 50%.

Tool:
FMN45 | Dia. = 3 inches, z = 7 Teeth
MultiEdge Double 8 (ONGU0606) | LC610T

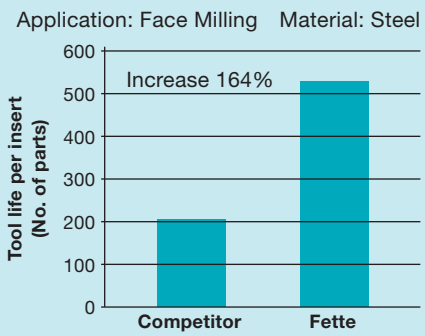
Material:
GGG NiSiCr 3552 GGG60-Nodular Iron

Cutting data:
v_c = 590 sfm
n = 720 rpm
v_f = 71 ipm
woc = 2.4 inch
doc = 0.16 inch

Fette solution:
Milling Cutter: Dia. = 3", z = 7 Teeth
FMN 45

Inserts: ONGU 0606 ANEN LC610T

Cutting data:
v_c = 660 sfm
n = 800 rpm
v_f = 100 ipm
f_z = 0.016 inch
doc = 0.06 inch
No. of edges: 16

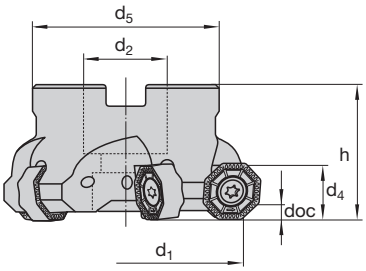


Cost savings:

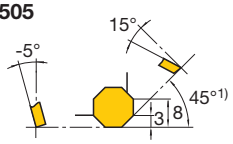
Fette:
Tool life 528 parts
Feed rate = 100 ipm
Insert 16 cutting edges

Competitor:
Tool life 200 parts
Feed rate = 75 ipm
Insert only 8 cutting edges

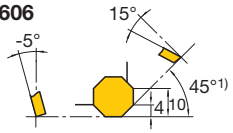
FMN45



ONGU0505



ONGU0606

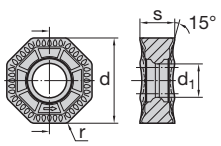




d_1	Cutter Body No.	EDP No.	d_4	h	d_2	d_5	doc_{max}	z ⚙	Insert	Insert Screw	Torx Driver
INCH											
2"	FMN45 O06.200AA-I	1950420	.630	1.57	.750	1.57	.157	4	ONGU 0606	1045133	1048422 T20
2"	FMN45 O06.200AA-IF	1950421	.630	1.57	.750	1.57	.157	6			
2.5"	FMN45 O06.250AA-I	1950422	.630	1.57	.750	1.97	.157	5			
2.5"	FMN45 O06.250AA-IF	1950423	.630	1.97	.750	1.97	.157	8			
3"	FMN45 O06.300AB-I	1950424	.630	1.97	1.00	2.36	.157	7			
3"	FMN45 O06.300AB-IF	1950425	.630	1.97	1.00	2.36	.157	10			
4"	FMN45 O06.400AD-I	1950426	.630	1.97	1.50	2.95	.157	9			
4"	FMN45 O06.400AD-IF	1950427	.630	1.97	1.50	2.95	.157	12			
5"	FMN45 O06.500AD	1950428	.630	2.48	1.50	3.54	.157	11			
5"	FMN45 O06.500AD-F	1950429	.630	2.48	1.50	3.54	.157	15			
6"	FMN45 O06.600AD	1950430	.630	2.48	1.50	5.12	.157	13			
6"	FMN45 O06.600AD-F	1950431	.630	2.48	1.50	5.12	.157	19			
METRIC											
32	FMN45 005.032AN-I	1027400	12.7	40	16	32	3	3	ONGU 0505	1045131	1048335 T15
32	FMN45 005.032AN-IF	1027401	12.7	40	16	32	3	4			
40	FMN45 005.040AN-I	1027402	12.7	40	22	40	3	4			
40	FMN45 005.040AN-IF	1027403	12.7	40	22	40	3	5			
50	FMN45 005.050AN-I	1027404	12.7	40	22	40	3	5			
50	FMN45 005.050AN-IF	1027405	12.7	40	22	40	3	7			
63	FMN45 005.063AN-I	1027406	12.7	40	22	50	3	7			
63	FMN45 005.063AN-IF	1027407	12.7	40	22	50	3	9	ONGU 0606	1045133	1048422 T20
50	FMN45 006.050AN-I	1027420	16	40	22	40	4	4			
50	FMN45 006.050AN-IF	1027421	16	40	22	40	4	6			
63	FMN45 006.063AN-I	1027422	16	40	22	50	4	5			
63	FMN45 006.063AN-IF	1027423	16	40	22	50	4	8			
80	FMN45 006.080AN-I	1027424	16	50	27	60	4	7			
80	FMN45 006.080AN-IF	1027425	16	50	27	60	4	10			
100	FMN45 006.100AN-I	1027426	16	50	32	75	4	9			
100	FMN45 006.100AN-IF	1027427	16	50	32	75	4	12			
125	FMN45 006.125AN	1027428	16	63	40	90	4	11			
125	FMN45 006.125AN-F	1027429	16	63	40	90	4	15			
160	FMN45 006.160AN	1027430	16	63	40	130	4	13			
160	FMN45 006.160AN-F	1027431	16	63	40	130	4	19			

Note: For larger diameters use our cartridge for Multi Mill, EDP No. 1028081

Indexable Inserts

N = Number of cutting edges	l	s	d	d_1	r	ISO-Code Cat-No.	Cutting materials – Ident No.														For cutter Cat-No.
							LC280QN	LC280TT	LC610Q	LC240T	LC230F	LC225T	LC225S	LC630T	LW240	LW225	LC610E	LC610T	LC610A	BN025	LC603Z	
 N = 16		5.56 (.219)	12.7 (.500)	4.4 (.173)	2 (.079)	ONGU 0505ANEN				1054009		1054017						1054014				FMN45
		5.56 (.219)	12.7 (.500)	4.4 (.173)	2 (.079)	ONGU 0506ANEN-SL WP Wiper												1054018[1]				
		6.35 (.250)	16 (.630)	6.3 (.248)	2 (.079)	ONGU 0606ANEN				1054008		1054015						1054013				
		6.35 (.250)	16 (.630)	6.3 (.248)	2 (.079)	ONGU 0606ANEN-SL WP Wiper												1054016[1]				

[1] LC610T with additional TiN top layer

Cutting Data Recommendations

	Material	(N/mm2)	DIN Des.	Materials	Carbide Grade	Cutting Speed V_c (sfm)	Recommended max. feed per tooth f_z [in] with woc = 0.75 x d_1	
							ONGU0505	ONGU0606
							doc_{max} = 0.12 inch	doc_{max} = 0.16 inch
							inch	inch
	Plain carbon steel	300-500	St 37, St 44	A36, 1005–1029	LC 225 T	650–800	0.018	0.020
		500-700	St 52, St 70	A570	LC 240 T			
		350-500	U- und and R St 37-2	1.0036, 1.0038				
	Free cutting steel	360-550	9 S 20, 9 SMn 28	1213			0.018	0.020
		600-800	45 S 20, 60 S 20	1.0727, 1.0728				
	Structural alloy steel	500-950	Ck 45	1045			0.016	0.018
			26 CrMo 4	4130				
	Heat-treatable steel,	500-950	42 CrMo 4	4140		590–660	0.014	0.016
	medium strength		50 CrV 4	1.2241				
	Cast steel	-950	GS 40	1.0416		460–530	0.012	0.014
	Case hardening steel	-950	16 MnCr 5	5115, 8620		460–590	0.012	0.014
	Heat-treatable steel,	950-1400	42 CrMo 4	4140		390–530	0.010	0.012
	high strength		30 CrNiMo 8	~8740				
	Nitriding steel	950-1400	34 CrAl 6	~6150		390–460	0.010	0.012
	Tool steel	950-1400	X 38 CrMoV 5 1	H11		390–460	0.008	0.010
			X 155 CrVMo 12 1	D2				
	Cast iron with flake	100-400	EN-GJL 250	EN-JL-1040	LC 610 T	660–850	0.018	0.020
	graphite	(120-260 HB)	(GG 25)	A159, J431				
	Alloyed cast iron	150-250	EN-GJLA-XNiCr35-2	A436		530–660	0.012	0.014
		(160-230 HB)	(GGL-NiCr 35-2)					
	Cast iron with	400-800	EN-GJS-600	EN-JS-1060		460–590	0.014	0.016
	nodular graphite	(120-310 HB)	(GGG60)	(0.7060)				
	Malleable cast iron	350-700	EN-GJMB-550-4	EN-JL-1160		530–660	0.014	0.016
		(150-280 HB)	(GTS55)	A220				

The cutting data indicated are starting values and must be adjusted to the prevailing conditions

Printed in USA 08/08

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