



Leitz Metalworking
Technology Group

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MultiEdge Double 8 Face Milling Cutter



Insert with 16 Cutting Edges

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 ($R_z < 15 \mu\text{m}$).

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 R_z well below $10 \mu\text{m}$.

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 increased 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:

$v_c = 590 \text{ sfm}$
 $n = 720 \text{ rpm}$
 $v_f = 71 \text{ ipm}$
 $woc = 2.4 \text{ inch}$
 $doc = 0.16 \text{ inch}$



Fette solution:

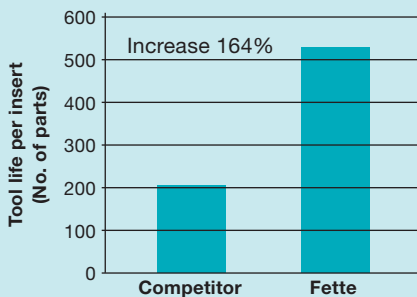
Milling Cutter: Dia. = 3", z = 7 Teeth
FMN 45

Inserts: ONGU 0606 ANEN LC610T

Cutting data:

$v_c = 660 \text{ sfm}$
 $n = 800 \text{ rpm}$
 $v_f = 100 \text{ ipm}$
 $f_z = 0.016 \text{ inch}$
 $doc = 0.06 \text{ inch}$
No. of edges: 16

Application: Face Milling Material: Steel



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



Cutting Data Recommendations

	Material	(N/mm ²)	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			
Steel	Plain carbon steel	300-500	St 37, St 44	A36, 1005-1029	LC 225 T LC 240 T	650-800	0.018	0.020			
		500-700	St 52, St 70	A570							
		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, medium strength	500-950	42 CrMo 4	4140					590-660	0.014	0.016
			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, high strength	950-1400	42 CrMo 4	4140					390-530	0.010	0.012
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	Cast iron with flake graphite	100-400 (120-260 HB)	EN-GJL 250 (GG 25)	EN-JL-1040 A159, J431	LC 610 T	660-850	0.018	0.020			
	Alloyed cast iron	150-250 (160-230 HB)	EN-GJLA-XNiCr35-2 (GGL-NiCr 35-2)	A436					530-660	0.012	0.014
	Cast iron with nodular graphite	400-800 (120-310 HB)	EN-GJS-600 (GGG60)	EN-JS-1060 (0.7060)					460-590	0.014	0.016
	Malleable cast iron	350-700 (150-280 HB)	EN-GJMB-550-4 (GTS55)	EN-JL-1160 A220					530-660	0.014	0.016

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